APPENDIX H

PRIOR NEPA COORDINATION

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RECORD OF DECISION
CENTRAL AND SOUTH FLORIDA PROJECT
MODIFIED WATER DELIVERIES TO
EVERGLADES NATIONAL PARK
TAMIAMI TRAIL MODIFICATIONS

DECISION

The Final Revised General Reevaluation Report and 2nd Supplemental Environmental Impact Statement (RGRR/SEIS) for the Central and Southern Florida Project, Modified Water Deliveries to Everglades National Park, Tamiami Trail Modifications, in Dade County, Florida address the additional water conveyance needs across the Tamiami Trail. Based upon the RGRR/SEIS, views of other Federal, State, and local agencies, Native American Tribes, non-governmental organizations, the general public, and the review by my staff, I find the plan recommended by the District Engineer, Jacksonville District, U.S. Army Corps of Engineers to be technically feasible, environmental justified, cost effective, in accordance with environmental statutes, and in the public interest. The recommendation is to implement the plan identified in the RGRR/SEIS as Alternative 14. This alternative includes the construction of a bridge up to 2-miles long at the western end of the 10.7-mile project corridor, a bridge up to one-mile long at the eastern end, and raising the profile of the unbridged portions of Tamiami Trail.

ALTERNATIVES AND CONSIDERATIONS BALANCED IN MAKING THE DECISION

The project would provide necessary capacity through Tarniami Trail (U.S. Highway 41) for the modified water flows to the Everglades National Park (ENP) while avoiding unacceptable structural impacts on Tamiami Trail due to modified flow regime.

In addition to the no-action alternative, nine other alternatives with removal of portions of the road replaced by one or more bridges of various lengths were carried through the final alternative evaluation and selection process. These included the three different bridge lengths evaluated in the 2003 GRR/SEIS that were withdrawn pending additional analyses. The present document incorporates by reference all the alternatives that were analyzed in the late 1990's and in the 2003 GRR/SEIS, but have subsequently been eliminated from further consideration. The No-Action Alternative would involve making no improvements to the Tamiami Trail to increase the capacity to convey water flows from the north without damaging the Tamiami Trail roadbed. All action alternatives included elevating the unbridged portion of the highway to prevent roadbed deterioration from elevated water levels during high water flows expected after implementation of potential future water management plans, and providing vehicle access, as needed, for the private properties along the south side of the highway. The action alternatives differed in the length of road removal/bridge spans and location. Alternative 9 consisted of a 3000-foot bridge span located at the western portion of the project corridor. Alternative 10 consisted of a centrally located four-mile bridge.

Alternative 11 consisted of an easterly located four-mile bridge. Alternative 12 consisted of a westerly located three-mile bridge. Alternative 13 consisted of a westerly located two-mile bridge. Alternative 14 is described above as the Recommended Plan. Alternative 15 consists of a two bridges with lengths of 1.3 miles and 0.7 miles located to the west and east, respectively. Alternative 16 consists of three 3000-foot bridges located in the western, central, and easterly portions of the project corridor. Alternative 17 consists of a 10.7-mile bridge spanning the entire corridor.

The alternative plans were evaluated based on their potential performance in restoring the historic hydropatterns and functions of the downstream wetland ecosystem in the Northeast Shark River Slough portion of Everglades National Park. Specific efforts were made to avoid or minimize any adverse effects on historical and cultural resources, local businesses, and Native American facilities along Tamiami Trail. Overlaid on this was a fiscal consideration in the allowable cost of construction based on the project budget limit of the Department of Interior (USDOI). Based on the analysis prepared for the RGRR/SEIS, input from other agencies, and public input, the environmentally preferable alternative is the 10.7-mile bridge designated as Alternative 17. Alternative 17 was not recommended because of its extremely high cost and significant adverse cultural and socio-economic impacts. Cognizant of the USDOI budget considerations, the Recommended Plan (Alternative 14) would best meet the ecosystem restoration objectives of the project, while minimizing cultural and socio-economic impacts and adverse effects to the private properties along the highway.

MEANS TO AVOID OR MINIMIZE ADVERSE EFFECTS

All practicable means to avoid or minimize adverse effects have been incorporated into the Recommended Plan. The road removal/bridges have been sited where they will allow significant restoration of the downstream wetlands and minimize, as much as possible, impacts to private development and to two wading bird nesting colonies along the highway. Vehicle access will be provided to all businesses during and after construction. Impacts to traffic flow will be minimized by designing the highway construction corridor to allow two-way traffic during non-construction hours in accordance with Florida Department of Transportation (FDOT) standards. The design of the bridges and remaining highway fully meets all FDOT standards for public safety and durability.

Conditions to stringently control turbidity and erosion during construction will be placed into the construction specifications to minimize any impacts to downstream resources. A storm water collection system will be designed into each bridge to treat runoff in order to meet State water quality requirements.

Consultation with the U.S. Fish and Wildlife Service (USFWS) under provisions of the Endangered Species Act on listed species under their jurisdiction has been completed. Formal consultation on the Florida panther resulted in a USFWS Biological Opinion concluding that implementation of the Recommended Plan is not likely to jeopardize the continued existence of the Florida panther. For all other listed species in

the project area, the USFWS agreed with the Corps' determination that the Recommended Plan may affect, but would not be likely to adversely affect, the indigo snake, West Indian manatee, Cape Sable seaside sparrow, and Everglade snail kite.

A cultural resources survey has been conducted and concluded that two properties and the Tamiami Trail and Canal are eligible for listing on the National Register of Historic Places for their historical significance. The State Historic Preservation Officer has concurred with these determinations and will participate in an MOA on appropriate mitigation for impacts to these features.

Government to Government consultation with the Micosukee Tribe of Indians of Florida will continue throughout the project implementation process in fulfillment of the Army's trust responsibilities to the Tribe.

PUBLIC /AGENCY COMMENTS IN THE FINAL EIS

All public comments received on the Final EIS have been addressed and incorporated into the recommended plan, as appropriate. The Miccosukee Tribe of Indians continues to oppose any bridge, preferring that the existing culverts be cleared out and augmented as needed to pass the maximum practicable flows. Non-governmental environmental organizations and their members continue to express a preference for bridging the full 10.7 mile length of the project corridor. The Florida State Clearinghouse determined that the Recommended Plan was consistent with the Florida Coastal Zone Management Program at this stage. The FDOT and the Florida Department of Environmental Protection provided documents supporting the project. No other State agencies had any further comments. The USDOI provided a letter of support for the Recommended Plan. The U.S. Environmental Protection Agency rated the Plan as LO, Lack of Objection.

COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

The Recommended Plan is in compliance with all applicable environmental laws and requirements including but not limited to the National Environmental Policy Act, Endangered Species Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, Coastal Zone Management Act, and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations." Recommendations from the USFWS under the Fish and Wildlife Coordination Act have been incorporated into the recommended plan. The Draft and Final EISs were distributed for public comment, and all comments were incorporated and considered. The U. S. Fish and Wildlife Service transmitted the final Biological Opinion to the Jacksonville District on January 12, 2006. The Biological Opinion completes compliance with Section 7 of the Endangered Species Act for this phase of the project. As between the Federal Government and the Non-Federal Sponsor, complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction,

operation, maintenance, repair or replacement of the project for lands for which the Non-Federal Sponsor has received a land compensation payment. In no event will the Federal Government assume any financial responsibility for cleanup and response costs of any CERCLA regulated materials for any lands associated with the project.

SUMMARY

Technical, environmental and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's *Principles and Guideline*. All applicable laws, executive orders, regulations, and local plans were considered in evaluating the alternatives. The recommend plan is not the environmentally preferable plan, but is the one that delivers substantial benefits in a cost effective manner while meeting the overall Federal and State objectives and incorporates features to avoid, minimize, or mitigate adverse environmental and social effects. Based on review of these evaluations, I find that the benefits gained by implementation of the recommended plan far outweigh any adverse impacts and the overall public interest will best be served. This Record of Decision completes the National Environmental Policy Act process.

John Paul Woodley, Jr.

John Paul Woodley, Jr.
Assistant Secretary of the Army
(Civil Works)

Date: January 25, 2006

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

January 12, 2006

Colonel Robert M. Carpenter
District Engineer
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Log No.: 4-1-04-F-5912
Date Received: August 26, 2005
Formal Consultation initiation Date: December 9, 2005
Project: Modified Water Deliveries; Tamiami Trail
County: Miami-Dade

Dear Colonel Carpenter:

This document transmits the Fish and Wildlife Service's (Service) biological opinion for the Tamiami Trail portion of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) project, and its effects on the eastern indigo snake (*Drymarchon corais couperi*), wood stork (*Mycteria americana*), the Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and Everglade snail kite critical habitat, the West Indian manatee (*Trichechus manatus*) and West Indian manatee critical habitat, Cape Sable seaside sparrow (*Ammodramus matitimus mirabilis*) and Cape Sable seaside sparrow critical habitat, and the Florida panther (*Puma concolor coryi*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located in Sections 01-06, Township 54 South, Range 37 East and Sections 07-11, Township 54 South, Range 38 East, Miami-Dade County, Florida (Figure 1).

The range of the threatened eastern indigo snake overlaps the project area and could be present, however, there are no known sightings within the footprint. It could potentially be affected by construction activities, so the U.S. Army Corps of Engineers (Corps) should include the "Standard Construction Precautions for the Indigo Snake" in the project design and implementation. The Corps has determined that the project "may affect, but is not likely to adversely affect" the Eastern indigo snake.

The endangered wood stork uses suitable habitats throughout the project area. Two active nesting colonies occur near the project area, including the "Tamiami East" and "Tamiami West" colonies located just south of the Trail on the eastern end of the project area. The eastern 1-mile

bridge would be constructed midway between these two colonies, such that the bridge would not overlap the established Primary or Secondary Zones of disturbance. Construction activity for the elevated unbridged road would impinge into the disturbance zone. As such, the Corps would manage the construction activities according to the Service's "Draft Supplemental Habitat Management Guidelines for the Wood Stork in the South Florida Ecological Services Consultation Area". The Corps has concluded that the project "may affect, but is not likely to adversely affect" the wood stork.

Potential effects to the Everglade snail kite would be a result of construction activities during the 36 months it would take to complete the project. Based on nesting data from 2000 to 2004, the closest nests to Tamiami Trail have been 500 feet (ft) from the road (2000) and 1,800 ft (2004). Because the closest known snail kite nest is a considerable distance from the project area, no specific precautions seem appropriate at this time. The Service and the Florida Fish and Wildlife Conservation Commission (FWC) monitor snail kite nesting and will notify the Corps if new information would warrant a change. There is no designated Critical Habitat located within the project area, so none would be affected. The Corps has concluded that the project "may affect, but is not likely to adversely affect" the Everglade snail kite.

The endangered West Indian manatee has rarely been documented in the project area. For the entire period of record spanning over 20 years, there has been only one recorded manatee utilizing the L-29 Canal adjacent to Tamiami Trail. The likelihood of a manatee occurring in the project area is negligible. There would be no activities in the canal during construction, therefore, the Corps has concluded that the project "may affect, but is not likely to adversely affect" the West Indian manatee.

The endangered Cape Sable seaside sparrow does not occur in the project footprint. The closest known sparrow habitat where sparrows are known to have nested lies 10 miles south of the project area. Construction activities would have no effect on this species. There is no designated Critical Habitat located within the project area, so none would be affected. The Corps concludes that the project "may affect, but is not likely to adversely affect" the Cape Sable seaside sparrow.

The Service concurs with the Corps' determination that the Tamiami Trail feature of the MWD to ENP Project "may affect, but is not likely to adversely affect" the eastern indigo snake, wood stork, Everglade snail kite, West Indian manatee, and Cape Sable seaside sparrow and will have "no effect" on Everglade snail kite critical habitat, West Indian manatee critical habitat, and Cape Sable seaside sparrow critical habitat. Therefore, the following biological opinion will not incorporate any further information regarding these species and will instead focus on the Tamiami Trail project and its effects on the Florida panther.

This biological opinion is based on information provided in the Corps' Biological Assessment (BA) dated August 26, 2005; the Service's Request for Additional Information delivered electronically to the Corps on September 8, 2005; the Corps' response to that request dated December 19, 2005; information submitted by the Corps' contractor GEC Incorporated on November 2, 2005; and meetings, telephone conversations, email, and other sources of information. A complete administrative record of this consultation is on file at the Service's South Florida Ecological Services Office, Vero Beach, Florida.

The 40.3-acre construction footprint of the recommended plan lies generally within 50 ft south of the Tamiami Trail along its entire 10.7-mile stretch. Based on Florida Land Use, Cover and Forms Classification System (FLUCCS) (Figure 8) the site is comprised of 0.3 acre of open water, 7.8 acres of mixed wetland hardwoods-mixed shrubs, 10.3 acres of freshwater marshes, 2.5 acres of freshwater marshes-sawgrass, 0.1 acre of spoil areas, and 19.3 acres of roads and highways. The dominant exotic species of vegetation throughout the project area is Brazilian pepper (*Schinus terebinthifolius*) and occupies greater than 50 percent of the shoulder along the entire 10.7-mile project length for a width averaging between 10 and 30 ft. The project area is bounded on the north by Water Conservation Area 3B (WCA-3B) and on the south by ENP.

In the Corps' draft letter on endangered species issues emailed to the Service on July 29, 2005, they determined that the Tamiami Trail portion of the MWD Project "may affect, but is not likely to adversely affect" the endangered Florida panther. In an email response dated September 8, 2005, and subsequent phone conversations, the Service suggested that the Corps submit a BA containing all current information regarding the projects effects on the panther and change the determination to "may affect". The Corps' final determination of "may adversely affect" was received in a letter dated August 26, 2005. The Service responded with an email on September 8, 2005, requesting additional information on the project, mainly with regards to cumulative effects. This information was received in a letter dated December 19, 2005.

Based on the analysis conducted by the Corps' contractor, GEC Incorporated, the project will result in removal of 20.6 acres of habitat marginally suitable for use by the Florida panther. This acreage would be removed due to the addition of fill to the highway embankment required for heightening the roadway. In contrast, 27.3 acres of the existing road embankment will be removed where the bridges (3 miles total) will be constructed. Although the area under the bridges may provide safe passage for any panthers wishing to cross the Trail, it does not represent good quality panther habitat due to shading by the low bridges. The Corps has agreed to compensate for the loss of 20.6 acres of panther habitat through the preservation and restoration of 30 acres located on the western side of the 8.5 Square Mile Area (SMA), which is part of the MWD Project.

The Use of Best Scientific and Commercial Information by the Service

The Service uses the most current and up-to-date scientific and commercial information available. The nature of the scientific process dictates that information is constantly changing and improving as new studies are completed. The scientific method is an iterative process that builds on previous information. As the Service becomes aware of new information, we will ensure it is fully considered in our decisions, evaluations, reviews, and analyses as it relates to the base of scientific knowledge and any publications cited in our documents.

Specifically, there is one such document cited in this biological opinion the Service acknowledges has been affected in its cited form by new scientific information. The Service has taken these new sources of information into account when using this document to help guide our analysis and decisions. This document is the South Florida Multi-Species Recovery Plan

(MSRP) of 1999 (Service 1999). In addition, the Service has examined Kautz et al. (In Review) for its scientific validity, specifically with regards to comments and recommendations by other reviewers as discussed below.

South Florida Multi-Species Recovery Plan

The MSRP was designed to be a living document and it was designed to be flexible to accommodate the change identified through ongoing and planned research and would be compatible with adaptive management strategies. These principals are set forth in both the transmittal letter from the Secretary of the Interior and in the document itself. As predicted, this is what indeed occurred in the intervening years since the MSRP was published. The Service uses the MSRP in the context it still presents useful information when taken in conjunction with all the new scientific information developed subsequent to its publication.

Kautz et al. (In Review)

The Florida Panther Subteam was charged with developing a landscape-level strategy for the conservation of the Florida panther population in south Florida. The Subteam produced the draft Landscape Conservation Strategy for the Florida Panther in South Florida in December 2002 and provided it to the Service. Upon receipt, the Service began to use the information in the draft Landscape Conservation Strategy in its decision making processes and documents since it was part of the best scientific information available to the Service at the time. Since then some portions of the science and findings in the draft Landscape Conservation Strategy have been challenged. Many, but not all, of the Subteam members have refined the methodology, further analyzed the data, and better defined the results of the Landscape Conservation Strategy into a draft article, referred to here as Kautz et al. (In Review), for submission to a professional peer-reviewed journal, Biological Conservation. To date, the authors have responded to a series of edits on their draft article and are awaiting response from the journal editor regarding acceptance of the manuscript for publication. In addition, the authors have considered the comments provided by Beier (2003) on the Landscape Conservation Strategy and the recommendations provided by the Scientific Review Team (SRT) (Beier et al. 2003) as discussed below.
Dr. Jane Comiskey, one of the co-authors of Kautz et al. (In Review), has expressed some concerns about the manuscript and we have addressed her concerns below as well. We have also addressed issues relating to the ESA and Information Quality Act.

Beier (2003) Comments on the Draft Landscape Conservation Strategy

Beier provided 37 comments on the Subteam's Landscape Conservation Strategy. Kautz et al. (In Review) addressed all of Beier's comments except those discussed below.

1. Include a statement that when analyses using nighttime data are available, this picture probably will change.

This statement is not in the manuscript, but in this and other biological opinions, the Service acknowledges that nighttime and 24-hour data are generally not readily available at this time. Data from GPS collars will be considered when found to be reliable and available. Availability

of nighttime or 24-hour data may possibly change some conclusions about panther habitat in the future. In analyses of puma habitat in California, Beier (2003) found that puma show markedly broader habitat use and selection at night compared to daytime. We expect that when GPS-collar data becomes more available, there will likely be a better understanding of habitat use at night. However, the Service does not solely rely on daytime telemetry in making its decisions regarding panther habitat. The Service considers panther habitat to include all areas required for the panther to live out its full life-cycle, including areas providing food and shelter and supporting characteristic movement such as hunting, breeding, dispersal, and territorial behavior.

2. Explain the witch's finger jutting eastward from the Primary Zone. No panther is going to have a home range 10 miles long and 400 meters wide. Buffer this so that it is at least 1 mile wide at its narrowest points, and 4 to 5 miles wide in most areas. I support the idea of making this primary habitat, but strongly feel that it does not make sense to make it so narrow.

This was not addressed. This comment relates to the slender portion of the Primary Zone that protrudes eastward at the border of Palm Beach and Broward Counties and the recommendation by Beier that it be buffered to be more inclusive. While Kautz et al. (In Review) did not make this requested modification, the Service will address this omission in biological opinions, as appropriate. The Service is careful to consider Primary, Dispersal, and Secondary Zones and other panther habitat, along with additional high-quality scientific and commercial data, in our analyses and evaluations.

3. Secondary Zone: Overall, the approach is *reasonable*, but not *rigorous*. We will probably never have data to make this a rigorous analysis, so it would be unreasonable to demand it. However, if you ran a cursory sensitivity analysis, you can determine how the map varies under different assumptions about cutoff points and relative weights.

According to Kautz et al. (In Review), the Secondary Zone is defined as natural and disturbed lands adjacent to the Primary Zone that may have potential to support an expanding panther population, especially if habitat restoration were possible. A preliminary boundary of a Secondary Zone was originally drawn on a hard copy map by the Multi-species Ecosystem Recovery Implementation Team (MERIT) Panther Subteam. The landscape context of the draft Secondary Zone was evaluated by combining a set of 30-meter (m) pixel grids created to measure three habitat-related variables (i.e., proximity to Primary Zone, proximity to a forest plus buffer patch, forest plus buffer patch size) and three land-use variables (i.e., proximity to urban lands, intensity of land use, and road type and density). Pixels in the six data layers were assigned scores of 1 to 10, with 10 representing the best case for panthers. Equal interval or progressively increasing or decreasing increment functions were applied to each data layer as deemed appropriate. The Secondary Zone boundary was finalized by adjusting the preliminary boundary to conform to results of the landscape context analysis and to land use changes as indicated by recent satellite imagery. To our knowledge, a cursory sensitivity analysis varying the scores assigned to the different variables within each data layer was not run. Therefore, we do not know how a map of the Secondary Zone would vary under different assumptions about cutoff points and relative weights. However, as a group, the Subteam reviewed the draft Secondary Zone boundaries in relation to the results of the context analyses and recent satellite imagery, and achieved consensus on the adjusted boundaries that best met the definition of the

Secondary Zone. Therefore, the Service does not believe the lack of this cursory sensitivity analysis affects the scientific validity of a Secondary Zone nor the Service's ability to use it in biological opinions.

4. A density of 1 panther per 11,000 hectare (ha) is a strange inference from this simple descriptive statistic. The 11,000 ha is simply total area divided by the number of panther home ranges in the area - it is not the size of a panther home range, nor is it the amount of forest in a panther home range, nor is there any logical reason that 11,000 ha should be the 'minimum size of a forest patch to have potential use by panthers. This is a complete non sequitur. This is not a sound approach toward estimating minimum forest area for use by panthers.

In the Landscape Conservation Strategy, the MERIT Panther Subteam attempted to identify lands north of the Caloosahatchee River for their capacity to support one or more groups of reproducing panthers. In that process, they assumed that large forest patches, at least 11,000 ha in size, would be needed. This assumption was based on an estimate of population density in optimal habitat given by Maehr et al. (1991a).

In conducting a compositional analyses, Kautz et al. (In Review) determined that panther use of forest patches within fixed kernel home ranges south of the Caloosahatchee River differed significantly from random. The smallest forest patch size classes occurred within home ranges in higher proportions relative to their availability than larger forest patch sizes. With this new knowledge, Kautz et al. (In Review) did not repeat the erroneous assumption that forest patches at least 11,000 ha in size are required by panthers. Kautz et al. (In Review) did use 1 panther per 11,000 ha as a rough density estimate along with a density estimate derived from their own analysis (1 panther per 12,919 ha) to provide estimated ranges for the potential number of panthers that could be accommodated by the current configuration of the Primary, Dispersal, and Secondary Zones.

5. Habitat Capacity, "defined as areas with pixel values >3." This definition, it seems, would result in a region with Swiss-cheese holes and outlier bubbles of habitat. Was there a step that involved smoothing to create a "smooth" map? If so, describe that step. If not, acknowledge and describe the nature of the resulting map.

For the purposes of their study, the Subteam developed an estimate of panther population density. Minimum convex polygons of panther home ranges were generated for all Florida panthers by year based on telemetry records through early in 2000 (n=49,889 telemetry locations, 1981 to 2000). Each polygon was converted to a 100 m pixel grid, and the resulting grids were summed. The region of most consistent panther occupancy for the period of record was defined as areas with pixel values ≥3. This step excluded areas used only once or twice by transient animals. To estimate population density, the total land area within the resulting region of panther occupancy was divided by 62, the estimated size of the panther population in 2000 (McBride 2000). Using this method, the region of most consistent panther occupancy from 1981 through early 2000 covered 800,951 ha. Based on the estimated panther population of 62 individuals, population density was one panther per 12,919 ha in 2000. Kautz et al. (In Review) did not address the shape or character of the resulting map, nor whether its creation

involved "smoothing." However, the resulting size of area of occupancy and population density they report are consistent with other published information and are considered the most current and up-to-date scientific information available to the Service.

6. "Region of panther occupancy was divided by 62, the estimated size of the panther population in 2000." Need to be specific about whether this refers to resident adults, resident breeding adults, adults plus independent juveniles, or total panthers, including kittens. McBride's estimate, I believe, was "adults plus independent juveniles" and is thus analogous to the estimated density provided by Maehr et al. (1991a).

This was partially addressed. Kautz et al. (In Review) states that "…estimates place the population at 80-100 adults and subadults (Land and Lacy 2000; McBride 2001, 2002, 2003)." Later, where Kautz et al. (In Review) use the estimate of 62 panthers, McBride is cited. According to Kautz et al. (In Review), "To estimate population density, the total land area within the resulting region of panther occupancy was divided by 62, the estimated size of the panther population in 2000 (McBride 2000)." McBride (2000) clearly indicates that 62 panthers "…includes collared and uncollared, adult and subadult, part-Texas and pure Florida panthers. It does not include kittens at the den site, nor does it include extrapolations." The Service understands that the panther population of 62 in 2000 included adults plus subadults and not kittens at the den.

7. "A population of this size would have N_e of ~ 50 breeding adults." This statement needs explanation based on published data, otherwise delete it. N_e is a notoriously difficult parameter to estimate.

No similar statement is in Kautz et al. (In Review) and N_e is not mentioned in the text. However, N_e is in Table 5 of Kautz et al. (In Review). The presence of N_e in Table 5 does not affect the scientific validity of the document nor the Service's ability to use it. The effective population size (N_e) is the number of adults in a population contributing to offspring in the next generation. Although we understand that N_e is difficult to estimate, we believe use of it is helpful in the population guidelines given in Kautz et al. (In Review). The Service realizes that the effective population size is generally smaller than the census size and is often much smaller than the census size. Although not specifically discussed in our biological opinions, we factor this into our analyses.

8. It is hard to believe that we cannot "rank agricultural lands as panther habitat" with data already in hand. Don't we already know that unimproved pasture > improved pasture > citrus > row crops?

This has been addressed to some degree. Table 1 of Kautz et al. (In Review) does rank some agriculture lands but not to the level of detail in the comments. The Service has factored the relative value of cover types/habitat types into our analyses and decision-making process during project evaluations and reviews.

9. Please change "long-term survival of the Florida panther" to "long-term survival of the existing population of the Florida panther."

This was not addressed in Kautz et al. (In Review). However, the Service realizes that a single Florida panther population exists in south Florida. Our decisions in this biological opinion and others are based upon ensuring the survival of the panther population in south Florida while working toward what is needed for recovery throughout the panther's historic range.

Scientific Review Team Report

1. Beier et al. (2003) states that "Telemetry data have been collected for Florida panthers over a long time period (since 1981), but in some analyses of habitat use, the vegetation maps may not have been updated and ground-truthed to stay current with analyses of telemetry data. The SRT has insufficient information to know to what degree this may be a problem, but recommends attention to this potential problem in future analyses."

Kautz et al. (In Review) states that "While researchers have continued to collect telemetry data for radio-collared panthers through the date of this writing, we are reporting the results of the only telemetry data that were available at the time of our collaborative work, and the telemetry data we used were closer in time to the date of the land cover data sets used for habitat analysis." In relation to how this point was addressed in the Kautz et al. (In Review) manuscript, Randy Kautz (Florida Fish and Wildlife Conservation Commission [FWC], personal communication, 2004) stated that he "spent several hours at one point zooming in on panther telemetry against a backdrop of recent land cover data, and … found very few obvious examples of this being a problem. My own take was that the volume of telemetry data of over 55,000 records was so huge that any currency problems comprised a very small error factor." The Service concurs with Randy Kautz's conclusion and believes that currency errors in such a large sample size would not be significant.

2. Beier et al. (2003) strongly recommends the use of compositional analyses (Aebischer et al. 1993) or another statistically appropriate method to compare the distributions of forest patch sizes available to panthers to those used by panthers.

Kautz et al. (In Review) used compositional analysis to assess the effect of forest patch size on panther habitat use within the study area south of the Caloosahatchee River. This was accomplished by reclassifying upland and wetland forest types into one forest class, determining patch size, and assigning individual forest patches to size classes according to an equal area increment function. Differences in proportions of forest patches within each home range relative to the entire study area were then tested. Kautz et al. (In Review) found that forest patches of all sizes are important to panthers and that the smallest classes of forest patches are especially important.

3. Beier et al. (2003) states, "The estimate of 84% to 87% kitten survival (Maehr and Caddick 1995) is indefensible for several reasons."

Root's (2004) population viability analysis (PVA) used the more recent and realistic survival rate of 0.62. This rate was developed by the use of data collected by FWC researchers and is one parameter within PVA at this time. This issue is further addressed below under Questions 2

and 6 within in the section addressing comments from Dr. Jane Comiskey.

4. Beier et al. (2003) states, "The SRT recommends that any future PVA models should be built from scratch and explicitly consider parameter uncertainty, variation (demographic, environmental) in parameters, and uncertainty in key functional relationships such as density dependence and the effects of inbreeding."

The Service believes that Root (2004) should be considered among the most current and up-to-date scientific and commercial information available and will use this analysis and other relevant information in our biological opinions until new, scientifically peer reviewed and verified data are present.

Dr. Jane Comiskey's February 2005 Comments on Kautz et al. (In Review)

Taken as a whole, Dr. Comiskey's concerns dealt primarily with the addition of text and explanation to Kautz et al. (In Review) if it was to be used as a substitute for the Landscape Conservation Strategy. The Service agrees that Kautz et al. (In Review) is not a stand alone document and must be used in conjunction with the body of scientific literature regarding the panther, including the work of the Panther Subteam.

1. Kautz et al. (In Review) lacks the needed ecological and environmental context to replace the full Landscape Conservation Strategy.

This may be correct in some instances. However, where the Service has cited this document in place of the Landscape Conservation Strategy we have ensured that the information is indeed included in Kautz et al. (In Review) and not part of the larger, more detailed Landscape Conservation Strategy. We believe that Kautz et al. (In Review) captures the major findings of the Landscape Conservation Strategy. Additional ecological and environmental context that is specific to an individual proposed project and proposed project site is included in biological opinions.

2. "The best we know given the current science at hand" indicates that some model assumptions are violated in the existing population and that parameter value estimates for reproductive rates and kitten survival are likely too optimistic. We need to acknowledge that in using model results.

*Some parameter value estimates for reproductive rates and kitten survival may be too optimistic. Some estimates of kitten survival have been too high (*e.g.*, 0.80) while others may be too low. It would have been our preference to see a range of kitten survival rates used in the models completed to date. Sensitivity analyses conducted by Karen Root of the Panther Subteam showed that kitten survival was the most important variable of those used within the PVA (K. Root, Bowling Green State University, personal communication, 2003). Therefore, we are aware that uncertainty within this parameter may have the greatest consequences on the projected population performance or trajectory. We acknowledge that uncertainties exist, that we are aware of them, and that Root's (2004) PVA used a 0.62 kitten survival rate. Future PVAs could include a range of updated kitten survival rates as well as other updated parameters. The Service and the FWC along with our partners will continue to monitor the panther population and the south Florida landscape and incorporate any new information and changes into our*

decision-making process.

We recognize that model parameters such as this can have effects on model outcomes. The Service is mindful of the limitations that exist, and when making decisions, we focus on the well being of the species.

3. Kautz et al. (In Review) does not include a definition of habitat.

We agree that specifically stating what constitutes panther habitat would be beneficial, however, we do not agree that lack of a definition should prevent use of Kautz et al. (In Review). Most biologists have an understanding of what habitat means. We believe that the Service and our counterparts understand what constitutes panther habitat. However, the Service considers panther habitat to be all areas required for the panther to live out its full life-cycle, including areas providing food and shelter and supporting characteristic movement such as hunting, breeding, dispersal, and territorial behavior.

4. We agreed on the Florida Panther Subteam on the importance of ranking land use categories on a scale of adverse to beneficial effects on panthers and evaluating proposed land use changes in the context of this scale. Randy Kautz felt that it would be redundant to include an explicit statement about this approach toward evaluating the impact to panthers of intensification of disturbance within zones.

The Service believes that ranking land use categories on a scale of adverse to beneficial effects on panthers and evaluating proposed land use changes in the context of this scale would be helpful, but is not necessarily needed to be part of Kautz et al. (In Review).

5. *RAMAS PVA Assumptions:* we need more discussion of the assumptions associated with the PVA and the degree to which we know these assumptions to be violated in the existing landscape and population.

We are aware of the assumptions used in the PVA analyses and consider these in our decisions. We will acknowledge the degree to which we believe any assumptions are being violated in our documents.

According to Root (2004), "All models assumed a 1:1 sex ratio, a stable age distribution, 50 percent of females breeding in any year, and an initial population of 41 females (82 individuals including males), the approximate population size in 2001-2002 (McBride 2001, 2002). The basic version of each model incorporated no catastrophes or epidemics, no change in habitat quality or amount, and a ceiling type of density dependence. The basic versions of the models incorporated a carrying capacity of 53 females (106 individuals).

The Service acknowledges that some of these assumptions are violated and tries to factor the degrees to which assumptions may be violated into our decisions. For example, the Service is aware that the Panther Subteam had attempted to address the effects of habitat loss by assuming a 25 percent loss of panther habitat over the first 25 years (i.e., *one percent per year) of the 100-year model simulation during their analyses. Although the probability of extinction only*

increases approximately one percent under this scenario, the mean final abundance of panthers was reduced by 26 percent to 38 and 31 females for the optimistic and moderate model scenarios, respectively. The actual likelihood of population declines and extinction can be much higher than the guidelines suggest, depending upon the number of and severity of assumptions violated. The Service realizes that habitat loss is occurring at an estimated 0.8 percent loss of habitat per year (R. Kautz, personal communication, 2003). The Service has tried to account for habitat loss and changes in habitat quality within its regulatory program and specifically through its habitat assessment methodology. For example, we have increased the base ratio used within this methodology to account for unexpected increases in habitat loss. Similarly, we consider changes in habitat quality and encourage habitat restoration wherever appropriate.

With regard to the assumption of no catastrophes, the Service has considered the recent outbreak of feline leukemia in the panther population at Okaloacoochee Slough as a potential catastrophe. However, the FWC is carefully monitoring the situation and it appears to be under control at this time due to a successful vaccination program. However, if the outbreak spreads into the population, the Service will consider this as a catastrophe and factor this into our decisions.

6. All three of the RAMAS PVA model scenarios (conservative, moderate, and optimistic) estimate the first year kitten survival rate at 62 percent, based on the Land/Linda kitten survival analysis from FWC annual panther reports (FWC 2001, repeated in 2002, 2003, 2004). However, the selective Land/Linda analysis omits without explanation many failed litters documented in denning tables in these same annual reports, resulting in estimates of survival rates that are too optimistic, especially for the purebred Florida component of the population where most failed litters occurred. Even when reliable rates are computed, PVA scenarios should incorporate a range of survival rates, since the high survival rate among introgressed litters in part reflects expansion into unoccupied areas of the range where there is less competition for space and prey. As such, rates could decrease as the range becomes saturated and as inbreeding effects may reappear in the population.

Per Tim O'Meara (FWC, personal communication, 2005), this does include litters that failed. The FWC annual report does include all litters for which FWC was able to get into the den and determine outcome of litters 6 months later; if litters were not included it was because they did not meet those criteria (T. O'Meara, personal communication, 2005). We agree that incorporating a range of kitten survivals into various PVA models would be beneficial in the future.

7. We should include a statement acknowledging that the SRT has found serious errors in panther science and has recommended reanalysis of baseline data for the population. We should acknowledge that, as a result of errors, PVA parameter values may have been overestimated, leading to PVA results that may be too optimistic. In the meantime, decisions should err on the side of the panther.

The Service agrees that the SRT has found errors in the scientific literature related to the panther and that reanalysis of baseline demographic data for the population should be done. The SRT has made numerous recommendations and the FWC and the Service are in the process

of prioritizing these based upon need and importance to panther recovery. We realize that PVAs, like any model or analyses, are only as good as the assumptions, parameters, and data used. We believe the best estimates for the parameters available at the time were used within the PVA. We realize that there is a possibility that the PVA results may be too optimistic. We agree that our decisions should err on the side of the panther.

Endangered Species Act/Information Quality Act

1. The ESA states the Service "shall use the best scientific and commercial data available." However, the vegetation data and land use/land cover maps, as well as the panther telemetry points are several years old.

Most information must be analyzed before it is of use to us. Due to the time for analysis and the extensive and lengthy peer review and publication process, it is not possible for an article to be published in a professional journal before the data becomes several months to a few years old as is the case in this instance. We believe that Kautz et al. (In Review) is an appropriate and valid addition to the body of science and it adds to the "best scientific and commercial data available," however, part of the base data and maps are not necessarily the most current.

2. The Information Quality Act Challenge states "The estimate of an 80 percent pre-introgression kitten survival rate in Maehr et al. (1999; 2002) was based on an indefensible estimate Maehr and Caddick (1995) that was unsupported by data (Beier et al. 2003:47, 49, 143-144)."

Root (2004) used the more current and realistic survival rate of 0.62. This issue is also addressed above in Question 3 within the SRT section, and in Questions 2 and 6 within the Dr. Jane Comiskey section.

Summary

After carefully reviewing Kautz et al. (In Review) and considering the above recommendations and standards, we believe that Kautz et al. (In Review) should be considered among the best scientific and commercial data available. Therefore, Kautz et al. (In Review) and the analyses contained therein, along with all other best scientific and commercial data available, is referred to in this document and will be used in our decision making process until or unless new information suggests revisions are necessary.

CONSULTATION HISTORY

On July 27, 2005, the Corps provided a draft letter on Endangered Species issues in which it concluded that the Recommended Plan "may affect, but is not likely to adversely affect" any of the listed species expected in the project area.

The Service responded with an email dated August 4, 2005, regarding potential project impacts. The Service stated that we could not concur with the "may affect, but is not likely to adversely affect" determination for the Florida panther due to its location within the Primary Zone of the

panther consultation area and several telemetry data within 5 miles of the project site. The Service also requested the Corps provide additional information to determine the need for formal consultation pursuant to 50 CFR § 402.14.

On August 26, 2005, the Corps provided a letter containing the BA of project impacts on the agreed upon listed species expected in the project area.

In an email dated September 8, 2005, the Service requested additional information on the project and its impacts to the Florida panther in order to make a final affects determination for this species.

On November 2, 2005, the Corps forwarded additional information compiled by their contractor, GEC Incorporated, on the Florida panther.

In a letter with attachments dated December 9, 2005, the Corps provided additional information on the Florida panther mainly with regards to cumulative impacts analysis and other points raised in the Services request for additional information.

In an email dated December 21, 2005, the Corps' contractor provided further clarification on the FLUCCS analysis used which demonstrates that the recommended plan will result in a net gain of 6 acres of wetlands in the panther Primary Zone. In the contractor's analysis it was assumed that the restored habitat under the bridges would be of similar quality to Florida panthers as that removed by heightening the roadway (20.6 acres). The assumption that the shaded habitat would be of equal value to the panther as that removed was incorrect.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

Proposed Action

The Recommended Plan would create two conveyance openings through Tamiami Trail by removing up to three miles (cumulative) of the existing highway, embankment, and associated culverts. The project site is located along a 10.7-mile stretch of U.S. Highway 41 (US 41) (Tamiami Trail) between S-333 and S-334 in west Miami-Dade County, Florida. The construction footprint encompasses a total of 40.3 acres: 0.3 acre of open water, 7.8 acres of mixed wetland hardwoods-mixed shrubs, 10.3 acres of freshwater marshes, 2.5 acres of freshwater marshes-sawgrass, 0.1 acre of spoil areas, and 19.3 acres of roads and highways. The dominant exotic species of vegetation throughout the project area is Brazilian pepper and occupies greater than 50 percent of the shoulder along the entire 10.7-mile project length for a width averaging between 10 and 30 ft.

The project will result in the permanent removal of 20.6 acres of wetland habitat suitable for use by the Florida panther. The project is located within the Florida panther Primary Zone (Kautz et al. In Review) (Figure 2). The project is also within the Service's consultation area for the Florida panther (Figure 3).

The crown elevation of the roadway will be raised to 12.3 ft National Geodetic Vertical Datum, requiring additional width of the embankment on the southern edge of the road to stabilize side slopes. The Recommended Plan will require expansion of the highway footprint southward due to the necessary avoidance of the L-29 Canal. The width of the expansion is estimated to vary from 0 to 48 ft, depending on the height of the road and the amount of elevation needed, and will result in the conversion of roughly 20.6 acres of wetland habitat marginally suitable for panther use into road embankment. In contrast, removal of the existing roadway under the bridges associated with the Recommended Plan (total of 3 miles) will result in the removal of 27.3 acres of fill which currently supports roadway.

The 27.3 acres of wetland habitat produced as a result of bridging 3 miles of the roadway will most likely result in open water habitat due to shading by the bridge spans. Although the quality of this type of habitat for use by panthers is not as good as the 20.6 acres being removed via road widening, it is thought that the wildlife underpasses provided by the bridges for panthers and other wildlife will be a significant benefit. Additionally, the removal of the 20.6 acres of exotic infested habitat close to the roadway may prove beneficial in reducing road mortality to panthers by removing an attractive nuisance next to a major roadway. In addition to the restoration of usable wetland habitat and removal of exotic vegetation along the highway, implementation of the Recommended Plan would improve 109,000 acres of wetland habitat in ENP through the restoration of deep sloughs in Northeast Shark Slough (NESS) and the promotion of improved sheetflow characteristics south of the Trail.

The Corps has proposed to provide compensation for project effects to panther habitat through preservation and enhancement of approximately 30 acres of Primary Zone habitat near the 8.5 SMA, which is also a part of the MWD project. This preservation provides compensation for the loss of 20.6 acres of lower quality habitat on the project site for foraging and dispersal by the Florida panther through the off-site protection and restoration of approximately 30 acres of higher quality panther habitat in areas nearer to higher quality panther habitat (Figure 9).

Action Area

The consultation area for the Florida panther includes lands in Charlotte, Glades, Hendry, Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe Counties, as well as the southern portion of Highlands County (Figure 3). Developed urban coastal areas in eastern Palm Beach, Broward, and Miami-Dade Counties, and in western Charlotte, Lee, and Collier Counties were excluded because they contain little or no panther habitat and it is unlikely that panthers would use such areas.

Movements of Florida panthers are much larger than the project site and, therefore, the action area is larger than the proposed action area identified by the Corps' public notice. The action area, which is a subset of the current panther range, includes those lands the Service believes may experience direct and indirect effects from the proposed development. Maehr et al. (1990b) monitored five solitary panthers continuously for 130-hour periods seasonally from 1986 to 1989, rarely observing measurable shifts in location during the day, but nocturnal shifts in location exceeding 20.0 kilometers (km) (12.4 miles) were not unusual. Maehr et al. (2002) in a later report documents a "mean maximum dispersal distance" of 68.1 km (42.3 miles) for subadult males and

20.3 km (12.6 miles) for subadult females. In the same report Maehr et al. (2002) documents a "mean dispersal distance" of 37.3 km (23.1 miles) for subadult males. Comiskey et al. (2002) documents a "mean dispersal distance" for subadult male panthers as an average distance of 40.1 km (24.9 miles) from their natal range, which is similar to the dispersal distance referenced by Maehr et al. (2002).

Therefore, for both direct and indirect effects, the Service defined the action area (Figure 7) as all lands within a 25-mile radius of the proposed bridge spans along the Tamiami Trail, which is slightly greater than the mean dispersal distance for subadult males. This action area does not include urban lands, lands east of L-30 and L-31N levees, and lands outside the Service's panther consultation area. This action area includes areas anticipated to sustain direct and indirect effects, such as roadways experiencing increased traffic, areas with increased human disturbance (project area and periphery of project), and areas in which habitat fragmentation and intraspecific aggression may be felt.

STATUS OF THE SPECIES AND CRITICAL HABITAT RANGEWIDE

The State of Florida declared the panther a game species in 1950, gave it complete protection in 1958, although not an official designation, and closed the hunting season. The Federal government listed the panther as endangered in 1967 (32 FR 4001). Heavy hunting and trapping, an inability to adapt to changes in the environment, and land development were cited as reasons for the species decline. Critical habitat has not been designated for the Florida panther, therefore, none will be affected.

Status

Of the 27 recognized subspecies of *P. concolor* described by Hall (1981), the Florida panther is the sole remaining subspecies in the eastern United States. Historically, the panther was distributed from eastern Texas or western Louisiana and the lower Mississippi River Valley east through the southeastern states in general, intergrading to the north with *P. c. cougar*, and to the west and northwest with *P. c. stanleyana* and *P. c. hippolestes* (Young and Goldman 1946). The Florida panther had been eliminated from most of the historic range by 1950. Occasional sightings and signs were reported throughout the rural southeast between 1950 and 1980 (Anderson 1983). The only confirmed panther population was found in south Florida (Anderson 1983).

Species Description

The Florida panther was first described by Charles B. Cory in 1896 as *Felis concolor floridana* based on a specimen he collected in Sebastian, Florida (Hall and Kelson 1959). Bangs (1899), however, noted *Felis floridana* had previously been used for a bobcat and, believing the panther was restricted to peninsular Florida and could not breed with any other form, assigned it full specific status as *Felis coryi*. The taxonomic classification of the *Felis concolor* group was revised by Nelson and Goldman (1929), and the panther was assigned subspecific status as *Felis concolor coryi*. This designation also incorporated *Felis arundivaga*, which had been classified by Hollister (1911) from specimens collected in Louisiana. Detailed descriptions of each of the

subspecies are provided in Young and Goldman (1946) (30 subspecies) and Hall (1981) (27 subspecies). The genus *Felis* was recently revised so all mountain lions, including the Florida panther, were placed in the genus *Puma* (Nowell and Jackson 1996).

The Florida panther is a medium-sized mammal described as dark tawny in color, with short, stiff hair (Bangs 1899), and having longer legs and smaller feet (Cory 1896) than other puma subspecies. Adult males reach a length of 2.15 m (7 feet [ft]) from their nose to the tip of their tail and may reach or exceed 68 kilograms (kg) (150 pounds) in weight, but typically average around 54.5 kg (120 pounds). They stand approximately 60 to 70 centimeters (23 to 27 inches) at the shoulder. Adult females are smaller, with an average weight of 34 kg (75 pounds) and length of 1.85 m (6 ft). The skull of the Florida panther has been described as having a broad, flat, frontal region, and broad, high-arched or upward-expanded nasals (Young and Goldman 1946).

The coat of an adult Florida panther is unspotted and typically rusty reddish-brown on the back, tawny on the sides, and pale gray underneath. The long cylindrical tail is slender compared to some of the other subspecies of *Puma concolor* (Belden 1989). Florida panther kittens are gray with dark brown or blackish spots and five bands around the tail. The spots fade as the kittens grow older and are almost unnoticeable by the time they are 6 months old. At this age, their bright blue eyes turn to the light-brown straw color of the adult (Belden 1989).

Three external characteristics are often observed in Florida panthers that are not found in combination with other subspecies of *Puma concolor*. These characteristics are a right angle crook at the terminal end of the tail, a whorl of hair or "cowlick" in the middle of the back, and irregular, light flecking on the head, nape, and shoulders (Belden 1986). The light flecking may be a result of scarring from tick bites (Maehr 1992a; Wilkins 1994). The kinked tail and cowlicks are considered manifestations of inbreeding (Seal et al. 1994).

Life History

Panthers are essentially solitary. Interactions between adult females and their kittens are most frequent. Interactions between adult male and female panthers are second in frequency, last from 1 to 7 days, and usually result in pregnancy. Conflicts between males are common and often result in serious injury or death to some individuals. Between October 1984 and June 2004, there were 36 known deaths attributed to intraspecific aggression (FWC 2004). While most of those were between males, one-third occurred between male and female panthers resulting in 12 deaths of females (FWC 2004). Overall, the amount of mortality from intraspecific aggression appears to be increasing with a total of 13 mortalities during the first 10 years of study and nearly double that in the second 10 years (FWC 2004). In addition, the extant of mortality in female panthers from intraspecific aggression appears to be increasing. Since 1995, 10 of the 23 known deaths from intraspecific aggression were female panthers, whereas in previous years only 2 of 13 such deaths were females (FWC 2004). Maehr et al. (1991a) believes higher densities may lead to increases in panther interactions and aggressive conflicts between male panthers, and male and female

panthers. However, aggressive encounters between females were not documented in the Maehr et al.'s (1991a) studies. Increases in published verified population numbers from 2000 to 2003 and changes in land use during the same period suggest the densities of panthers may have increased to some degree.

Panther activity levels peak around sunrise and sunset. The lowest activity levels occur during the middle of the day. Females at natal dens follow a similar pattern with less difference between high and low activity periods. Although some travel occurs during the day, panthers are mostly crepuscular (Maehr et al. 2004). There are no known differences in seasonal movements, wet and dry season habitat use, seasonal variation in diet, or effects of season on road crossings. Responses to fluctuations in water levels are believed to be not significant (Maehr et al. 1989, 1990b, 1991a).

Habitat

Human persecution over a 100-year period, along with bounty hunting, land clearing, lumbering, and market hunting of deer, resulted in a range-wide decline of the panther, and as a result, panthers now occupy just 5 percent of their former range. The remaining breeding population is in south Florida, south of the Caloosahatchee River. Maehr (1990a) estimated the occupied range of the panther in 1990 to be 2.2 million acres (880,000 ha) in south Florida. Logan et al. (1993) estimated the range to be 3.1 million acres (1,254,500 ha). The area of most consistent panther occupancy from 1981 through early 2000 was estimated by Kautz et al. (In Review) to be 2 million acres (800,951 ha). Native landscapes within the Big Cypress Swamp region of south Florida, within occupied panther range, are dominated by slash pine, cypress, and freshwater marshes, interspersed with mixed-swamp forests, hammock forests, and prairies. Private lands represent about 25 percent of the Primary, Secondary, and Dispersal Zones in south Florida (Kautz et al. In Review). The largest contiguous tract of panther habitat is the Big Cypress/Everglades ecosystem in Collier, Monroe, and Miami-Dade Counties. Suitable habitat also extends into Lee, Hendry, Charlotte, Glades, Broward, Palm Beach, Highlands, Sarasota, Polk, Osceola, Hardee, and Desoto Counties. Some researchers are of the belief the low nutrient, frequently saturated soils prevalent south of I-75 in south Florida do not produce the quality or quantity of forage required to support large herds of white-tailed deer (*Odocoileus virginianus*), a dominant prey species for panthers (see Food Habits), and believe it is unlikely habitat in Big Cypress National Park (BCNP) and Everglades National Park (ENP) is as productive as habitat on private lands in northern and western Collier County in terms of panther health, reproduction, and density (Maehr 1992a). However, more recent reports provide contradictory information (McBride 2002, 2003). In addition, according to Beier et al. (2003), the conclusion that ENP and BCNP are poor habitats for panthers is not scientifically supported.

Forests provide important diurnal habitat for panthers. Belden et al. (1988) reported Florida panthers use hardwood forests and mixed swamps more than would be expected based on their occurrence in the landscape. While panthers may seek upland forests for daytime uses, as indicated by telemetry data, Kautz et al.'s (In Review) compositional analysis also confirmed that panther home ranges also included non-forest cover types interspersed in landscapes of forest patches, including freshwater marsh, prairie and shrub lands, agricultural lands, and pasture lands.

Telemetry data are the best available information about daytime panther habitat use. However, there are limitations and assumptions that should be stated about any conclusions based on telemetry data. Beier et al. (2003) points out several biases in research by Maehr and Cox (1995) in relating the importance of forests as panther habitat. These biases are stated to result from the use of daytime telemetry locations to describe habitat use, the selective use of telemetry data, and using location of telemetry versus panthers as a sampling unit. First, the panther telemetry data is collected in the morning, which creates a disjuncture between the time of data collection (beginning shortly after 7:00 am) and the times of peak panther activity (dawn and dusk). Habitat selection by panthers may be considerably broader at dawn and dusk (Beyer and Haufler 1994; Rettie and McLoughlin 1999). Second, the majority of panthers that have been radio-collared were on public lands. Telemetry research began in the Fakahatchee Strand State Preserve in 1981 (Belden et al. 1988) and gradually expanded to include BCNP, ENP, Florida Panther National Wildlife Refuge (NWR), Picayune Strand State Forest, Okaloacoochee Slough State Forest, and Corkscrew Regional Ecosystem Watershed (CREW). It also expanded to include some telemetry data research on private lands in Collier, Hendry, Glades, and Lee Counties. Lastly, tests of the accuracy of some of the telemetry locations revealed the difference between the actual location of the transmitter and the recorded location averaged 77 m (Dees et al. 2001) and can be as large as 230 m (Belden et al. 1988). These results were obtained by placing test transmitters in known locations in the field, plotting transmitter locations from the air, and then determining the error of actual versus observed locations.

A more recent analysis (Maehr et al. 2004) suggests some likelihood daytime telemetry locations are not dissimilar to areas used by panthers at night. However, 24-hour telemetry has not returned enough data to fully address this question. Maehr et al. (1990b) found panthers were very active around sunrise, a time of day well represented by aerial telemetry data, but that Comiskey et al. (2002) claims is missing from previous analyses of panther habitat use. Although it is not known exactly what behavior each animal was engaged in at the time these data were collected, it likely included a variety of activities, *e.g.*, walking, hunting, feeding, grooming, and resting. Maehr et al. (2004) believes daytime telemetry data include periods during which panthers are quite active. However, Maehr et al. (2002) did not compare habitats recorded by observers during periods of activity (as indicated by mercury tip switches or radio-collars) to habitats available to the panther.

The Service and the FWC commissioned a SRT to do an independent critical review of literature related to ecology and management of the panther. The team (referred to as the SRT) published their findings in Beier et al. (2003). Included in these findings, the SRT: (1) encourages the acquisition and analysis of nighttime telemetry data to provide a more complete picture of Florida panther habitat use; (2) urges researchers to fully disclose and explain reasoning for selective use of data; (3) believes panthers rather than individual panther locations should be the sampling unit for determining habitat use; (4) believes vegetation maps used in habitat analysis be current with the data being analyzed; and (5) recommends to cease using a 90-m distance from forest cover, minimum sizes of forest patches, and the Panther Habitat Evaluation Model in making decisions about habitat mitigation and acquisition. Following release of these critical review findings, revised analyses of panther telemetry data and habitat use data were undertaken by Kautz et al. (In Review) to address issues associated with the use of individual panther telemetry data,

vegetation maps, and the use of the 90-m distance from forest cover. Furthermore, the Service does not use or rely on habitat assessments that incorporate the Panther Habitat Evaluation Model (Maehr and Cox 1995) in site evaluations.

Maehr and Cox (1995) studied 10 female and 13 male panthers and found the home ranges included 6 percent freshwater marsh, 5 percent grass and agriculture, 3 percent dry prairie, 3 percent shrub swamp, and 1 percent barren land; and concluded panthers can remain part of the native fauna in areas where agricultural activities exist. The above cover types, which represent open habitat, totaled 18 percent of the panther's home range. Maehr et al. (1991a) states panthers may travel through agricultural areas at night. Panthers currently in ENP have home ranges less than 10 percent forest cover (Comiskey et al. 2002). Maehr et al. (2002) found three panthers that crossed the Caloosahatchee River all went through areas with limited forest cover, and dispersing males wander widely through unforested and disturbed areas (Maehr 1992a). Beier et al. (2003) reported Comiskey et al. (2002) made a credible case that no significant relationship exists between home range size and forest cover.

Reproduction and Demography

Male panthers are polygynous and maintain large home ranges that may overlap home ranges of others males, although not to the extent overlapping that of several females. Breeding peaks in fall and winter (Maehr 1992b). Gestation lasts 90 to 96 days. Parturition is distributed throughout the year with the majority of births occurring between March and July. Prenatal litters range from three to four. Postnatal litters range from one to four kittens (FWC 2001). Litters surviving to 6 months of age average 2.2 kittens. Female panthers losing their litters generally produce replacement litters within the same breeding season. Intervals between litters range from 19 to 22 months (FWC 2004). Den sites are usually located in dense, understory vegetation, typically saw palmetto (Maehr 1990a).

Historical records of den sites and birth rates for the past 5 years for the Florida panther, based on data provided by the FWC (2004), were: 7 dens, 18 kittens in 2003/2004; 6 dens, 17 kittens in 2002/2003; 12 dens, 26 kittens in 2001/2002; 8 dens, 21 kittens in 2000/2001; and 6 dens, 17 kittens in 1999/2000. Based on 2.5 kittens per den and an understanding a female panther will generally produce kittens every other year, the female population is estimated to include an average of 14 to 16 producing females with 7 to 8 females per year producing 18 to 20 kittens per year.

Early estimates of infant mortality varied and were in conflict. For example, Roelke et al. (1993) characterized infant mortality as relatively high with fewer than half of all births resulting in offspring that survive beyond 6 months of age. Land (1994) estimated the kitten survival rate between age 6 months and 1 year at 0.895, based on a sample of 15 radio-instrumented kittens. More recently, however, the FWC has been visiting den sites of female Florida panthers and Texas puma females since 1992 and has documented the number of kittens that survived to 6 months of age for 38 of these litters (FWC 2004). Florida panther and Texas puma kitten survival to 6 months-of-age were estimated to be 52 and 72, respectively, but were not significantly different (P=0.2776) (FWC 2004). Average kitten survival, therefore, was 62 from birth to 6 months of age (FWC 2004). The FWC (2004) determined the survival of kittens

greater than 6 months of age by following the fates of 55 radio-collared dependent-aged kittens, including 17 Texas puma descendants from 1985 to 2004. They found only 1 of these 55 kittens died before reaching independence (a 98.2 percent survival rate) (FWC 2004). Twenty-three of 24 female panthers, first captured as kittens, became residents and 18 (78.3 percent) produced litters. One female was too young to determine residency status (FWC 2004). Female panthers were considered as adult residents if they were older than 18 months of age, established home ranges, and bred or if they were older than 3 years of age and established a home range (Maehr et al. 1991b). Twenty-eight of the 31 male panthers became residents; three males were too young to determine residency status (FWC 2004). Male panthers were considered residents if they were older than 3 years of age and established a home range that overlapped with females (FWC 2004).

Females are readily recruited into the population as soon as they are able to breed (Maehr et al. 1991a). Age at first reproduction has been documented as early as 18 months for females (Maehr et al. 1989). However, 50 percent of known panther dens were initiated by females aged 2 to 4 years. Females aged 5 to 11 years initiated the remaining 50 percent.

The first sexual encounters for males have occurred at about 3 years of age (Maehr et al. 1991a). Dispersing females are quickly assimilated into the resident population, typically establishing home ranges less than 1 home range width from their natal ranges (Maehr et al. 2002), while males usually go through a period as transient (non-resident) subadults, moving through the fringes of the resident population and often occupying suboptimal habitat until an established range becomes vacant (Maehr 1997). Turnover in the breeding population is low and documented mortality in radio-collared panthers is greatest in subadult and non-resident males (Maehr et al. 1991b). Maehr (1990a) believes there is a lack of unoccupied suitable habitat for dispersing subadult Florida panthers, which may increase fighting among males, and successful male recruitment appears to depend on the death or home range shift of a resident adult male (Maehr et al. 1991a). However, more recent population data (FWC 2004) show an increase in population numbers, home ranges, and subadults panthers, which is in conflict with Maehr's (1990a) data. The increase in panthers is believed to be associated in part with the genetic restoration benefits from the introduction of Texas cougars into the Florida panther population (FWC 2004).

Natural genetic exchange with other panther populations ceased when the Florida panther became geographically isolated over a century ago (Seal et al. 1994). Isolation, reduced population size, and inbreeding resulted in loss of genetic variability and diminished health. Data on polymorphism and heterozygosity, along with records of multiple physiological abnormalities, suggest the panther population has experienced inbreeding depression (Roelke et al. 1993; Barone et al. 1994). Inbreeding depression has been related to decreased semen quality, lowered fertility, reduced neonatal survival, and congenital heart defects in a variety of domesticated and wild species (Lasley 1978; Ralls and Ballou 1982; Wildt et al. 1982; O'Brien et al. 1985; Roelke 1991). Congenital heart defects have been shown to be related to diminished panther survival and reproduction (Roelke 1991; Dunbar 1993; Barone et al. 1994). The Florida panther exhibits diminished male reproductive characteristics compared to other populations of *Puma concolor* in North and Latin America (Barone et al. 1994). In a comparison of 16 male Florida panthers and 51 males from *Puma concolor* populations in Texas, Colorado, Latin

America, and North American zoos, Wildt (1994) found a much higher rate of unilateral cryptorchidism (43.8 versus 3.9 percent), lower testicular and semen volumes, diminished sperm motility, and a greater percentage of morphologically abnormal sperm in the Florida panther samples.

Measured heterozygosity levels indicate the Florida panther has lost 60 to 90 percent of its genetic diversity (Culver et al. 2000). Measured levels of mitochondrial DNA variation are the lowest reported for any similarly studied feline population, including leopards, cheetahs, and other *Puma concolor* subspecies. Electrophoretic analyses also indicated the Florida panther has less genetic variation than any other *Puma concolor* subspecies. Panther DNA fingerprint variation is nearly as low as in the small, isolated population of Asiatic lions of the Gir Forest Sanctuary in India (Roelke et al. 1993).

A genetic restoration program was initiated for the Florida panther in 1995. FWC (2001, 2003, 2004) indicated representation of Texas cougar genes in the south Florida population is probably close to the goal of 20 percent (Seal et al. 1994), although two of the eight Texas females are over-represented. The occurrence of kinked tails and cowlicks has been reduced in intercross progeny. Information on other morphological traits associated with genetic isolation and inbreeding such as cryptorchidism sperm deformities, atrial septal heart defects, and skull morphology cannot be collected until the intercross progeny mature or pass away. However, the fecundity of the intercross progeny would seem to indicate sperm deformities have been reduced. For example, one first-generation male captured and examined in the field by Smithsonian Theriogenologist, Dr. Jo Gayle Howard, had a sperm count 3 times that of a Florida panther, a sperm motility rate twice as high, a percentage of normal sperm 4 times greater, and a sperm concentration 10 times higher (McBride 2001). Since the genetic restoration program was initiated in 1995, the number of panthers monitored annually has increased, highway mortality has increased, and panthers have moved into formerly unoccupied niches on public land in south Florida (McBride 2002). This may indicate a more robust population that varies dramatically from population parameters prior to 1995. However, Maehr and Lacy (2002) recommended caution in claiming success through genetic management. They state it is likely local prey populations cannot support the increased number of panthers over the long term, and as long as the panthers are restricted to southwest Florida, the problems of inbreeding and genetic variation that led to the genetic restoration program will return. Still, McBride (2002) states panther recovery continues to benefit from genetic restoration and an existing State land acquisition program (for large tracts of land) north of BCNP will provide additional benefits.

Mortality, Trauma, and Disturbance

Records of mortality on uncollared panthers have been kept since February 13, 1972, and records of mortality on radio-collared panthers have been kept since February 10, 1981. A total of 143 panther mortalities have been documented through June 2004, with 59 (41 percent) known deaths occurring in the past 4 years (FWC 2001, 2002, 2003, 2004). Overall, documented mortality (n = 99) of radio-collared and uncollared panthers averaged 3.4 per year through June 2001. However, from July 2001 through June 2004, documented mortality (n = 48) increased with an average of 16.0 per-year during these years (FWC 2002, 2003, 2004).

Eighty-four free roaming, radio-collared panthers have died since 1981, and intraspecific aggression was the leading cause accounting for 41 percent of these mortalities (74 percent males and 26 percent females) (FWC 2004).

Unknown causes and collisions with vehicles accounted for 24 percent and 19 percent of mortalities, respectively. Other factors (7 percent), infections (5 percent), and diseases (4 percent) caused the remaining mortalities (FWC 2004). Except for intraspecific aggression, the causes of mortality were found to be independent of gender (FWC 2004). It is likely, some causes, such as road mortality, are more likely to be found and, therefore, are over represented in the above total.

Between February 13, 1972, and June 30, 2004, Florida panther vehicular trauma (n = 73), averaged 2.3 panthers per year (FWC 2004). From July 1, 2004, through December 2005, there were 14 additional instances of vehicular trauma (FWC, unpublished data), for a total of 87 instances. Although the relative significance of vehicular trauma to other sources of mortality is not entirely known, it has been the most often documented source of mortality (Maehr 1989; Maehr et al. 1991b) because the death of uncollared panthers, due to other causes (*e.g.*, intraspecific aggression, old age, disease, etc.) often goes undetected.

There are presently 28 wildlife underpasses with associated fencing suitable for panther use along I-75 (Figure 7). There are four underpasses suitable for panther use currently existing, and two additional underpasses presently proposed by the Florida Department of Transportation (FDOT) along U.S. Highway 29 (US 29) (Department of the Army Public Notice SAJ-2004-778) (Figure 7). Several additional panther/wildlife crossings are proposed along roadways in rural Lee and Collier Counties in addition to the proposals along US 29 (FWC 2001). In addition, Collier County, in cooperation with the National Wildlife Federation and the Florida Wildlife Federation, is coordinating a study of the segment of CR 846 east of Immokalee and the section of Oil Well Road where the road crosses Camp Kies Strand by Dr. Reed Noss and Dr. Daniel Smith to determine the optimum location for wildlife crossing construction (WilsonMiller 2005). However, vehicular trauma still occurs on outlying rural roads and the FWC is conducting a study to determine the impacts of vehicular collisions to panthers and studying ways to minimize panther vehicle collisions (FWC In Review).

In an examination of the location of panther-suitable wildlife crossings and locations of vehicular collisions, we note that after installation, no collisions have been recorded in the immediate vicinity of those crossings, with the exception of one recent collision in December 2005 on SR 29. There have been no collisions on east-west I-75 in the vicinity of crossings since installation in 1991. Prior to 1991, there were five recorded deaths from collisions. The FDOT has also identified the location of, the proposed the construction of, and the construction of several wildlife crossing on SR 29. Proposed crossings A and B (Figure 7) will be in an area of 10 documented collisions from 1980 to 2004. Existing crossings C and D, north of I-75, were installed in 1995. There were two recorded collisions in the vicinity of crossing D from 1979 to 1990, but none at either C or D since crossing installation. Existing crossing E was installed in 1997. There has been one collision approximately 1 mile to the north in 2002. Existing

crossing F was installed in 1999. There was one documented collision in the immediate vicinity in 1981, two collisions approximately 1.5 miles to the north since crossing installation, and one collision approximately 0.5 mile to the south in December 2005.

Florida panthers were hunted for bounty during the 1800s and for sport up until the 1950s (Tinsley 1970). Seven panther shootings, six fatal and one non-fatal, were documented between 1978 and 1986. A female Texas puma introduced for genetic restoration was shot in 1998 (FWC 1999). Education, self-policing among hunters and regulation are the tools by which shootings are minimized. All free-ranging pumas in Florida are protected by a "similarity of appearance" provision in the ESA (56 FR 40265-40267; August 14, 1991).

Food Habits

Florida panther food habit studies indicate commonly consumed prey include feral hog (*Sus scrofa*), white-tailed deer, raccoon (*Procyon lotor*), nine-banded armadillo (*Dasypus novemcinctus)*, and alligator (*Alligator mississippiensis*) (Maehr et al. 1990a; Dalrymple and Bass 1996). Adult panthers generally consume one deer or hog per-week, supplemented by opportunistic kills of smaller prey (Maehr 1997). A female with kittens may need the equivalent of two such kills per-week. The high caloric intake needed to sustain successful reproduction and rearing of kittens is best achieved when a dependable supply of large prey is available (Roelke 1990). Deer and hogs accounted for 85.7 percent of consumed biomass north of I-75 and 66.1 percent south of I-75 (Maehr et al. 1990a). Differences in prey abundance and availability were indicated by an eight-fold greater deer abundance north of I-75 versus south of I-75, although the estimated number of deer consumed did not differ between the north and south portions of the study area. Hog numbers were lower south of I-75. Hogs dominated the diet of panthers in the north in terms of both estimated biomass and numbers. In the south, deer accounted for the greatest estimated biomass consumed, whereas raccoons were the highest estimated number of prey items consumed. Domestic livestock were found infrequently in scats or kills, although cattle were readily available north of I-75 (Maehr et al. 1990a). There appears to be a consensus among land managers and Federal biologists that white-tailed deer and wild hogs are the dominant prey for panther, while rabbits, raccoon, and armadillos are of secondary importance (Beier et al. 2003).

Prey Density

Panther prey density, especially deer, is an important factor in evaluating panther habitat. The type and number of prey available affects the health and distribution of panthers, as well as their ability to breed and support young. Environmental factors, specifically the availability of high quality forage, affect the prey density and influence the carrying capacity and population dynamics of the prey species, especially deer herds (Fleming et al. 1993). In the Everglades region, deer inhabit a variety of landscape types, including pinelands, high ridges, and adjacent periphery wetlands, which include the mosaic of sawgrass and wet prairie savannahs and sloughs that comprise the interior freshwater marshes and coastal mangrove forest.

Deer are ruminants, with small stomach capacities, and are selective for high quality forage to meet their nutritional needs. To meet these high quality forage needs, deer selectively move through the mosaic of habitat types taking advantage of the seasonal forage that provide the most benefit to the deer. Water management practices have reduced habitat heterogeneity and the sequence of seasonal and successional patterns of plant growth and appear to have affected deer abundance (Fleming et al. 1993).

Other adverse changes in habitat characteristics that affect deer density include the invasion of exotics into native uplands, over drainage of marshes, and the establishment of monotypic stands of unpalatable plant species, generally resulting from nutrient enrichment related to agricultural and urban runoff. The replacement of these native plant communities reduces important habitat heterogeneity and the ability of deer to meet their critical dietary needs. For example, deer densities on over-drained, exotic species-infested private lands being developed in northwest Lee County averaged one deer per 591 acres (Turrell 2001) to one deer per 534 acres (Passarella 2004). As a contrasting example, in historic communities in the Everglades Wildlife Management Areas, deer densities in the mid-to-late 1950s averaged one deer per 100 acres (40 ha) when the vegetative community was a mosaic of native species, whereas more recent surveys after succession of the native community to a monotypic stand of cattails (1993) showed a 67 to 76 percent decrease (one deer per 300 acres to one deer per 475 acres) of the 1959 population estimate (Fleming et a1. 1993).

In further comparison to higher quality habitat communities, deer densities in wildlife management areas in the BCNP's Corn Dance Unit were predicted to be between one deer per 165 acres and one deer per 250 acres (Steelman et al. 1999). However, deer densities in these units may also have been affected by off road vehicle use. Predictions of deer density in Fakahatchee Strand were estimated to be higher than one deer per 18.2 acres (McCown 1991). Deer densities in the Mullet Slough area of BCNP yielded an estimated density range of one deer per 93 acres and one deer per 250 acres. The Stairsteps Unit of BCNP support densities of one deer per 190 acres to one deer per 218 acres from track count estimates. Aerial surveys for the same units used after 1982, estimated deer densities between one deer per 60 acres and one deer per 2,643 acres (Steelman et a1. 1999). Harlow (1959) predicted deer density in wet prairie habitat in Florida to be one deer per 115 acres.

Movements and Dispersal

Adult Florida panthers occupy available habitat in a pattern similar to western cougars (Land 1994). More than 7,000 telemetry locations on 26 radio-collared panthers between 1985 and 1990 indicated home range size varied from 21 to 461 square miles (53 to 1,194 square km), averaging 200 square miles (519 square km) for resident males and 75 square miles (193 square km) for resident females. Beier et al. (2003) found estimates of panther home ranges varying from 74 to 153 square miles (193 to 396 square km or 47,359 to 97,920 acres) for females and 168 to 251 square miles (435 to 650 square km or 107,520 to 160,639 acres) for males to be reliable. The most current estimate of home-range sizes (minimum convex polygon method) for established, non-dispersing adult panthers, based on radio-collared panthers monitored during the 2003-2004 genetic restoration and management annual monitoring report (n = 37), averaged 60.3 square miles (156.1 square km or 38,572 acres) for females (n = 22) and

160.6 square miles (416 square km or 102,794 acres) for males (n = 10) (FWC 2004). Home ranges of resident adults were stable unless influenced by the death of other residents and home range overlap was extensive among resident females and limited among resident males (Maehr et al. 1991a).

Maehr et al. (1990b) monitored five solitary panthers continuously for 130-hour periods seasonally from 1986 to 1989, rarely observing measurable shifts in location during the day, but nocturnal shifts in location exceeding 20 km (12.4 miles) were not unusual. Maehr et al. (2002) in a later report documents a "mean maximum dispersal distance" of 42.3 miles (68.1 km) for subadult males and 12.6 miles (20.3 km) for subadult females. In the same report Maehr et al. (2002) documents a "mean dispersal distance" of 37.3 km for subadult males. Dispersal patterns tend to be circular and of insufficient length to ameliorate inbreeding. Comiskey et al. (2002) documents a "mean dispersal distance" for subadult male panthers as an average distance of 40.1 km (24.9 miles) from their natal range, which is similar to the dispersal distance reference by Maehr et al. (2002). Subadult dispersal typically occurs around 1.5 to 2 years of age, but may occur as early as 1 year of age. Dispersing males wander widely through unforested and disturbed areas (Maehr 1992a).

Janis and Clark (1999) compared the behavior of panthers before, during, and after the recreational deer and hog-hunting season (October through December) in areas opened (BCNP) and closed (Florida Panther NWR, Fakahatchee Strand State Preserve) to hunting. The variables examined were: (1) morning activity rates; (2) movement rates; (3) predation success; (4) home range size; (5) home range shifts; (6) habitat selection; (7) distance from panther locations to trails; and (8) frequency of panther use in the Bear Island Unit of BCNP. The authors failed to detect any relationship between hunting and the first 6 variables. Of the last 2 variables, they determined the distance of panther locations from trails increased an average of 0.31 mile (0.57 km) and the frequency of panther use in the Bear Island Unit decreased from 30 up to 40 percent during the hunting season. An analysis of movement rates, a measure of energy expenditure, predation success, and energy intake do not indicate any direct, negative energetic responses to increased human activity during the hunting season. However, the increase in average distance from trails and decrease in panther use of the Bear Island Unit are indicative of a behavioral change. Janis and Clark (1999) surmise the increase in the distance of panther locations from trails is "biologically minor" and probably related to prey behavior (*i.e.*, white-tailed deer moving deeper into the forest to avoid hunters). The decrease in panther use of the Bear Island Unit is balanced by an increase in use of private lands north of BCNP as "refugia." However, Beier et al. (2003) finds this and other studies of hunting impacts to panthers to be inconclusive.

Disturbance

Panthers, because of their wide-ranging movements and extensive spatial requirements, are also particularly sensitive to habitat fragmentation (Harris 1985). Mac et al. (1998) defines habitat fragmentation as: "The breaking up of a habitat into unconnected patches interspersed with other habitat which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines." The reference to

"unconnected patches" is a central underpinning of the definition. For panther conservation, this definition underscores the need to maintain corridors connecting habitat in key locations of south Florida. Habitat fragmentation can result from road construction, urban development, and agricultural land conversions within migratory patterns of panther prey species and affect the ability of panthers to move freely throughout their home ranges. Construction of highways in wildlife habitat typically results in loss and fragmentation of habitat, traffic related mortality, and avoidance of associated human development. Roads can also result in habitat fragmentation, especially for females who are less likely to cross them (Maehr 1990a).

Kautz et al. (In Review) estimated approximately 27 percent of panther habitat within the Primary Zone is on private land. Maehr (1990a) indicated development of private lands may limit panther habitat to landscapes under public stewardship. From March 1984 through January 4, 2006, the Service concluded or is concluding consultation on 63 projects involving the panther and habitat preservation (Table 1). The minimum expected result of these projects is impacts to 89,402 acres and the preservation of 29,434 acres of panther habitat (Table 1). Of the 89,402 acres of impacts, 39,918 are due to agricultural conversion and 49,484 acres to development and mining. Portions (10,370 acres) of the largest agricultural conversion project, the 28,700 acres by U.S. Sugar Corporation, were re-acquired by the Federal Government as a component of the Talisman Land Acquisition (Section 390 of the Federal Agricultural Improvement and Reform Act of 1996 [Public Law 104-127] Farm Bill Cooperative Agreement, FB4) for use in the Comprehensive Everglades Restoration Project. The non-agriculture impacts are permanent land losses, whereas the agricultural conversions may continue to provide some habitat functional value to panthers, depending on the type of conversion. However, these land conversions provide less functional value than native habitats. The 49,484 acres of expected impacts from development and mining included a mixture of agricultural fields consisting of row crops and citrus groves and natural lands with varying degrees of exotic vegetation. Management actions on some of the lands preserved include exotic species removal, fire management, wetland hydrology improvement, improved forest management practices, and recreational benefit improvements.

Habitat Management

Prescribed burning is probably the single most important habitat management tool available to public land stewards. Dees et al. (1999, 2001) examined panther use of habitat in response to prescribed burning at Florida Panther NWR and BCNP between 1989 and 1998. The greatest temporal response by panthers to burning in pine was within 1 year followed by a decline in subsequent years and is likely due to the rapid re-growth of vegetation, which attracted prey (Dees et al. 2001). Panthers demonstrated notable selection for pine stands that had been burned within 1 year relative to older burns. Compositional analysis showed that panthers were more likely to position their home ranges in areas that contained pine. Dees et al. (2001) suggest that panthers were attracted to less than 1-year-old burns because of white-tailed deer and other prey responses to vegetation and structural changes caused by prescribed fire. According to Dees et al. (2001), it was the effect of burning in pine, rather than the pine per se, which most influenced habitat selection by panthers. However, they caution that the effects of shorter burning intervals on vegetation composition and landscape-level changes be determined before burning rotations are reduced.

To counteract the threat of exotic species invasion and monotypic stands of unpalatable plant species, all public land and most private land managers pursue exotic and invasive species management and habitat improvement through fire management and eradication programs. However, these actions are restricted by available funds to implement these programs.

Land Conservation Trends

The 1.4-million-acre ENP was established in 1947, more than 2 decades before the Florida panther was listed as endangered. The 577,000-acre BCNP was established in 1974, just 1 year after passage of the ESA. Additional State and Federal acquisitions since the establishment of ENP and BCNP include Fakahatchee Strand Preserve State Park (58,373 acres), Florida Panther NWR (26,400 acres), Picayune Strand State Forest (55,200 acres), Collier-Seminole State Park (7,271 acres), Okaloacoochee Slough State Forest (34,962 acres), and CREW (24,028 acres). As of April 2001, non-profit organizations, local governments, State and Federal agencies, and Tribes have protected approximately 2.21 million acres of panther habitat south of the Caloosahatchee River within the Primary, Secondary, and Dispersal Zones (Kautz et al. In Review). These protected lands are the cornerstones for the Service's continuing effort to work in tandem with the private sector and State and county government, to preserve and manage panther habitat. These lands are protected by conservation easements or transferred by title to public entities to manage.

Distribution

A variety of human activities contributed to the decline of the Florida panther. The first bounty on Florida panthers was passed in 1831. An 1887 Florida law authorized a payment of $5 for scalps (Tinsley 1970). Panthers were also shot on sight, hunted, poisoned, and trapped. Agricultural land clearing in the southeastern United States between 1850 and 1909 totaled 31.6 million acres (12.8 million ha). Lumbering reduced the original southern forest nearly 40 percent from 300 million acres (121.4 million ha) to 178 million acres (72.0 million ha) by 1919 (Williams 1990). Meanwhile the white-tailed deer, primary prey of the panther, was reduced from a range-wide population of about 13 million in 1850, to under 1 million by 1900 (Halls 1984). Over a 100-year period, bounty hunting, land clearing, lumbering, and market hunting of deer contributed to the range-wide decline of the panther.

At the beginning of the 20th century, the Florida panther population may have numbered as many as 500 (Seal et al. 1989). The State of Florida declared the panther a game species in 1950 and in 1958 totally protected the animal. In the 1970s, the FWC established a Florida Panther Record Clearinghouse to ascertain the status of the panther. The first field searches were made in 1972. The Florida Panther Act, a State law enacted in 1978, made killing the panther a felony.

Telemetry investigations began in 1981, primarily on public lands in southwest Florida. Maehr et al. (1991a) estimated the average density of panthers in southwest Florida between February and July 1990 to be one panther per 42.95 square miles (110 square km or 27,456 acres). When extrapolated over a 1,945.9-square-mile (5,040-square-km or 1,257,979-acre) area thought to be occupied by radio-collared panthers in southwest Florida, the estimated population of the area was 46 adults (9 resident males, 28 resident females, and 9 transient males) between

December 1985 and October 1990. This estimate assumed homogeneous density and similar age and sex composition over time and space. Maehr et al. (1991a) considered the actual population to be higher because the estimation technique excluded panthers in ENP, eastern BCNP, and areas north of the Caloosahatchee River. The Florida Panther Interagency Committee, comprised of the Service, National Park Service, Florida Department of Environmental Protection, and the FWC, estimated the population in 1993 at 30 to 50 adults (Logan et al. 1993). More recent estimates show a panther population (adults and subadults) of 62 in 2000 (McBride 2000), 78 in 2001 (McBride 2001), 80 in 2002 (McBride 2002), and 87 in 2003 (69 adults and 18 yearlings) (FWC 2003). No documented population number has been provided by FWC for 2004 to date. However, D. Land (FWC, personal communication, November 2004) estimates the population to be between 70 and 100 panthers.

Human persecution over a 100-year period, along with bounty hunting, land clearing, lumbering, and market hunting of deer, resulted in a range-wide decline of the panther, and as a result panthers now occupy just 5 percent of their former range. The remaining breeding population is in south Florida, south of the Caloosahatchee River. Dispersing males occasionally cross the Caloosahatchee River and have been observed in rural habitats of south-central Florida.

In the south Florida breeding population, habitat loss, habitat fragmentation, habitat degradation, and increased human disturbance resulting from agricultural and residential development are now considered among the primary threats to long-term panther persistence. Continued development associated with the expansion of Florida's urbanized east coast, urban development on the west coast, and the spread of agricultural development in the south Florida interior, have placed increasing pressure on panthers and panther habitat (Maehr 1990b, 1992b; Maehr et al. 1991a). Past land use activity, hydrologic alterations, road construction, and lack of fire management (Dees et al. 1999) have also affected the quality and quantity of panther habitat.

In southwest Florida, agriculture development between 1986 and 1990 resulted in a row crop acreage increase of 8,990 acres (3,640 ha) or 21 percent; a sugarcane increase of 16,000 acres (6,475 ha) or 21 percent; and a citrus increase of 54,000 acres (21,850 ha) or 75 percent. Rangeland, much of it suitable for panther occupation, decreased by 160,000 acres (64,750 ha) or 10 percent. In a more current analysis, (B. Stys, FWC, unpublished data, 2002) performed a change detection analysis for Collier, Lee, Hendry, Charlotte, and Glades Counties, and found the area of disturbed lands in these five counties increased 31 percent between 1986 and 1996. Most (66 percent) of the land use change over the 10-year period was due to conversion to agricultural. Forest cover types accounted for 42 percent of land use conversions, dry prairies accounted for 37 percent, freshwater marsh accounted for 9 percent, and shrub/brush lands accounted for 8 percent.

Residential, commercial, and industrial development projects may have an adverse direct effect on the Florida panther through: (1) the permanent loss and fragmentation of panther habitat; (2) the permanent loss and fragmentation of habitat that supports panther prey; (3) the loss of available habitat for foraging, breeding, and dispersing panthers; and (4) a reduction in the geographic distribution of habitat for the species. Indirect effects may include: (1) an increased risk of roadway mortality to panthers traversing the area due to the increase in vehicular traffic; (2) increased disturbance to panthers in the project vicinity due to human activities; (3) the reduction

in panther prey; (4) the reduction in value of panther habitat adjacent to the project due to habitat fragmentation; and (5) a potential increase in intraspecific aggression between panthers (and an increase in mortality of subadult male panthers) due to reduction of the geographic distribution of habitat for the panther.

Verified Panther Population

In September 2003, the documented south Florida panther population was 87 adults and subadults, not including kittens at the den (FWC 2003). The south Florida panther population has shown an increase in the survivability of young and juveniles (McBride 2003) and an increase in the population estimates from 62 in 2000 (McBride 2000) to 78 in 2001 (McBride 2001) to 80 in 2002 (FWC 2002) to 87 in 2003 (FWC 2003). No documented population number has been provided by FWC for 2004; however, D. Land (FWC, personal communication, November 2004) estimates the population to be between 70 and 100 panthers.

Population Dynamics

PVA has emerged as key components of endangered species conservation. This process is designed to incorporate demographic information into models that predict if a population is likely to persist in the future. PVAs incorporate deterministic and stochastic events including demographic and environmental variation, and natural catastrophes. PVAs have also been criticized as being overly optimistic about future population levels (Brook et al. 1997) and should be viewed with caution; however, they are and have been shown to be surprisingly accurate for managing endangered taxa and evaluating different management practices (Brook 2000). They are also useful in conducting sensitivity analyses to determine where more precise information is needed (Hamilton and Moller 1995; Beissinger and Westphal 1998; Reed et al. 1998; Fieberg and Ellner 2000).

As originally defined by Shaffer (1981), "a minimum viable population for any given species in any given habitat is the smallest isolated population having a 99 percent chance of remaining extant for 1,000 years despite the foreseeable effects of demographic, environmental and genetic stochasticity, and natural catastrophes." However, the goal of 95 percent probability of persistence for 100 years is the standard recommended by population biologists and is used in management strategies and conservation planning, particularly for situations where it is difficult to accurately predict long-term effects (Sarkar 2004; Shaffer 1978, 1981, 1987).

A total of 108 Florida panthers since 1981 have been radio-collared and monitored on public and private lands throughout south Florida (Maehr et al. 2002; Shindler et al. 2001). These data were used by researchers to estimate survival rates and fecundity and were incorporated into PVA models previously developed for the Florida panther (Cox et al. 1994; Kautz and Cox 2001; Seal et al. 1989, 1992; Maehr et al. 2002). These models incorporated a range of different model parameters such as general sex ratios, survival rates, age distributions, and various levels of habitat losses, density dependence, and intermittent catastrophes or epidemics. The outputs of these models predicted a variety of survival scenarios for the Florida panther and predicted population levels needed to ensure the survival of the species.

The Service, in February 2000, in order to develop an updated landscape-level strategy for the conservation of the Florida panther population in south Florida, appointed the Florida Panther Subteam. This Subteam is part of the overarching MERIT. MERIT includes more than 30 members representing Federal, State, and local governmental agencies, the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, academia, industry, and the private sector, and was created with the purpose of overseeing the implementation of the recovery and restoration tasks identified in the MSRP. One of the actions the Subteam evaluated was the current status of the Florida panther and the various PVA models developed. Based on this assessment, members of the Subteam requested the development of an updated set of PVA models for the Florida panther. These models, developed and presented by Root (2004), were based on RAMAS GIS software (Akçakaya 2002). These models were used to perform a set of spatially explicit PVAs.

Three general single-sex (*i.e.,* females only) models were constructed using demographic variables from Maehr et al. (2002) and other sources. A conservative model was based on Seal and Lacy (1989); a moderate model was based on Seal and Lacy (1992); and an optimistic model was based on the 1999 consensus model of Maehr et al. (2002). In each model, first-year juvenile survival was set at 62 percent based on recent information from routine panther population monitoring (Shindle et al. 2001). All models assumed a 1:1 sex ratio, a stable age distribution, 50 percent of females breeding in any year, and an initial population of 41 females (82 individuals including males), the approximate population size in 2001-2002 (McBride 2001, 2002).

Basic Versions: The basic versions of each model incorporated no catastrophes or epidemics, no change in habitat quality or amount, and a ceiling type of density dependence. The basic versions of the models incorporated a carrying capacity of 53 females (106 panthers - 50/50 sex ratio). Variants of the models were run with differing values for density dependence, various levels of habitat loss, and intermittent catastrophes or epidemics. Each simulation was run with 10,000 replications for a 100-year period. The minimum number of panthers needed to ensure a 95 percent probability of persistence for 100 years was estimated in a series of simulations in which initial abundance was increased until probability of extinction at 100 years was no greater than 5 percent. More detailed information concerning the PVA model parameters appears in Root (2004).

The results of these model runs predicted a probability of extinction for the conservative model of 78.5 percent in 100 years with a mean final total abundance of 3.5 females. Also, the probability of a large decline in abundance (50 percent) was 94.1 percent. The moderate model resulted in a 5 percent probability of extinction and mean final abundance of 42.3 females in 100 years. The probability of panther abundance declining by half the initial amount was 20 percent in 100 years under the moderate model. The optimistic model resulted in a 2 percent probability of extinction and mean final abundance of 51.2 females in 100 years. The probability of panther abundance declining by half the initial amount was only 9 percent in 100 years under the optimistic model. These models also provide a probability of persistence (100 percent minus probability of extinction) over a 100-year period of 95 percent for the moderate model and 98 percent for the optimistic model.

One Percent Habitat Loss: Model results were also provided by Root (2004) for probability of extinctions for 1 percent loss of habitat, within the first 25 years of the model run. The 1 percent loss of habitat equates to essentially all remaining non-urban privately owned lands in the Primary Zone and corresponds to the estimated rate of habitat loss (Root 2004) from 1986 to 1996 for the five southwest counties based on land use changes. For the moderate model, the model runs predict a probability of extinction increase of approximately one percent, from a probability of extinction of approximately 5 percent with no loss of habitat to 6 percent with 1.0 percent habitat loss per year, for the first 25 years. For the optimistic model, probability of extinction increased from approximately 2 percent with no loss of habitat to 3 percent with 1.0 percent habitat loss per year, for the first 25 years. These models also predicted the mean final abundance of females would decrease from 41 to 31 females, a 24.3 percent reduction for the moderate model and from 41 to 38 females, a 7.3 percent reduction for the optimistic model.

The model runs also predict a probability of persistence (100 percent minus the probability of extinction) over a 100-year period of approximately 94 percent for the moderate model and 97 percent for the optimistic model. The model runs, predict a mean final abundance of 62 individuals (31 females and 31 males) for the moderate model and 76 individuals (38 females and 38 males) for the optimistic model.

Population Guidelines: Kautz et al. (In Review), following review of the output of Root's PVA models and those of other previous PVAs for the Florida panther, suggested a set of population guidelines for use in management and recovery of the Florida panther. It is important to state that these broad guidelines represent a review of previous science, and not a new PVA. These guidelines are: (1) populations of less than 50 individuals are likely to become extinct in less than 100 years; (2) populations of 60 to 70 are barely viable and expected to decline by 25 percent over 100 years; (3) populations of 80 to 100 are likely stable but would still be subject to genetic problems (*i.e.*, heterozygosity would slowly decline); and (4) populations greater than 240 have a high probability of persistence for 100 years and are demographically stable and large enough to retain 90 percent of original genetic diversity.

Population guidelines for populations of panthers between 50 and 60 individuals and between 70 and 80 individuals were not specifically provided in Kautz et al. (In Review). However, the Service views the guidelines in Kautz et al. (In Review) as a continuum. Therefore, we consider populations of 50 to 60 individuals to be less than barely viable or not viable with declines in population and heterozygosity. Similarly, we consider populations of 70 to 80 to be more than barely viable or somewhat viable with some declines in population and heterozygosity. Like other population guidelines presented in Kautz et al. (In Review), these assume no habitat loss or catastrophes.

PVA Summaries and Population Guidelines: Root's (2004) moderate model runs, which have a carrying capacity 53 females (106 individuals), show final populations of 42.3 females (84 total) and 31.2 females (62 total) with extinction rates of 5 percent and 6 percent, respectively, for the basic and 1 percent habitat loss scenarios. The predicted final populations in Root (2004) are 84 and 62 panthers for no loss of habitat and 1 percent loss of habitat, respectively, over a 100-year period.

Kautz et al.'s (In Review) population guidelines applied to the Root (2004) moderate models for a population of 62 to 84 panthers, with or with/out habitat loss, respectively, describe the "with habitat loss" population as barely viable and expected to decline by 25 percent over a 100-year period. The "without habitat loss" is likely stable but would still be subject to genetic problems.

In conclusion, the Service believes the model runs show that lands in the Primary Zone are important to the survival and recovery of the Florida panther and that sufficient lands need to be managed and protected in southwest Florida to provide for a population of 80 to 100 panthers, the range defined as likely stable over 100 years, but subject to genetic problems. As discussed in the following section, the Service has developed a southwest Florida panther conservation goal that, through regulatory reviews and coordinated conservation efforts with land owners and resource management partners, provides a mechanism to achieve this goal.

Model Violations: The actual likelihood of population declines and extinctions may be different than the guidelines and models suggest, depending upon the number of and severity of assumptions violated. The Service realizes that habitat loss is occurring at an estimated 0.8 percent loss of habitat per year (R. Kautz, FWC, personal communication, 2003). The Service has accounted for some habitat loss and changes in habitat quality within its regulatory program, and specifically through its habitat assessment methodology (discussed in the Effects of the Action). For example, we have increased the base ratio used within this methodology to account for unexpected increases in habitat loss. Similarly, we consider changes in habitat quality and encourage habitat restoration wherever possible.

With regard to the assumption of no catastrophes, the Service has considered the recent outbreak of feline leukemia in the panther population at Okaloacoochee Slough as a potential catastrophe. However, the FWC is carefully monitoring the situation and it appears to be under control at this time due to a successful vaccination program. However, if the outbreak spreads into the population, the Service will consider this as a catastrophe and factor this into our decisions.

We acknowledge that uncertainties exist, assumptions can be violated, and catastrophes can occur. However, the Service and the FWC, along with our partners, will continue to monitor the panther population and the south Florida landscape and incorporate any new information and changes into our decision-making process.

Panther Habitat Conservation Plans: In the early 1990s, two plans for the protection of Florida panther habitat in south Florida were developed (Logan et al. 1993; Cox et al. 1994). Both of these plans identified privately owned lands that contained habitats important to the long-term conservation of the Florida panther. Logan et al. (1993) identified specific parcels of land by section, township, and range as Priority 1 and 2 preservation areas. However, this plan has been criticized as being too general (*i.e.*, targeted lands perceived as including too many areas not truly panther habitat [active rock and sand mines]) and for not having been available for public review and comment prior to publication. Cox et al.'s (1994) plan identified specific lands based on their habitat features and the likelihood they could support a minimally viable population of panthers for the next 200 years.

The lands identified in each of these planning studies, although referred to in the studies as essential to the survival and recovery of the Florida panther, were intended to be guides for land acquisition planning purposes, because of their inclusion of lands containing urban developments and other lands not considered truly panther habitat (*i.e.*, active rock and sand mines). These land preservation recommendations have been used by Federal, State, and county resource agencies as guides for public land acquisition programs, local land-use planning, and, in a few cases, compensation for land-use conversion projects proposed for lands identified in the plans.

An example of use of these planning studies is shown in Figure 8. This figure provides a representative view of the existing and proposed public land acquisition and preservation efforts within the southwest Florida landscape that not only benefits the Florida panther, but also provides benefits to the mosaic of other species important to the south Florida ecosystem. Table 2 provides a summary of the targeted and acquired acreages of conservation lands in southwest Florida. Based on the table, total lands targeted for acquisition to date are 3,588,749 acres.

Panther Recovery Goal: The 1987, 1995, and 1999 recovery objectives (Service 1987, 1995, 1999) for the panther were to achieve three viable, self-sustaining populations within the historic range of the Florida panther. In 2001, a new Florida Panther Recovery Team was appointed to revise the recovery plan. Although preliminary, the revised recovery objectives established in 2004 continue to be to achieve at least three self-sustaining, viable breeding populations of panthers within the historic range.

A high priority for recovery and conservation of the Florida panther is to ensure the survival of the existing breeding population south of the Caloosahatchee River. The Service's southwest Florida panther recovery goal is to achieve this priority and to identify lands north of the Caloosahatchee River that can be the recipient area for the expansion of the South Florida panther breeding population from south of the Caloosahatchee River to other parts of its historic range. We believe sufficient lands may be found north of the Caloosahatchee River and possibly elsewhere throughout the southeast (Thatcher et al. 2003), in conjunction with the lands conserved south of the river, to support a population of greater than 240 individuals.

The PVA models discussed in the previous section, and in detail in Root (2004) predict a population of greater than 80 individuals is needed for stability over a 100-year period, although subject to genetic problems and a population greater than 240 is needed to retain 90 percent of original genetic diversity. The Service also believes a stable population in southwest Florida will serve as the founder population for the recovery of the Florida panther throughout its historic range.

Land Preservation Needs: To further refine the land preservation needs of the Florida panther and to specifically develop a landscape-level program for the conservation of the Florida panther population in south Florida, the Service as previously discussed, in February 2000, appointed a Florida Panther Subteam. The Subteam in addition to the assignments discussed previously, was also charged with developing a landscape-level strategy for the conservation of the Florida panther population in south Florida. The results of this collaborative effort are partially presented in Kautz et al. (In Review). One of the primary goals of this effort was to identify a strategically located set of lands containing sufficient area and appropriate land cover types to

ensure the long-term survival of the southwest population of the Florida panther (Figure 9). Kautz et al. (In Review) focused their efforts on the area south of the Caloosahatchee River, where the reproducing panther population currently exists.

Kautz et al. (In Review) created an updated Florida panther potential habitat model based on the following criteria: (1) forest patches greater than 4.95 acres (2 ha); (2) non-urban cover types within 656 ft (200 m) of forest patches; and (3) exclusion of lands within 984 ft (300 m) of urban areas. The potential habitat map was reviewed in relation to telemetry data, recent satellite imagery (where available), and panther home range polygons. Boundaries were drawn around lands defined as the Primary Zone (Figure 8), defined as the most important area needed to support a self-sustaining panther population. Kautz et al. (In Review) referred to these lands as essential; however, as observed in the two previous plans (Logan et al. 1993; Cox et al. 1994), lands within the boundaries of the Primary Zone included some urban areas and other lands not considered to be truly panther habitat (*i.e.*, active rock and sand mines).

The landscape context of areas surrounding the Primary Zone was modeled and results were used to draw boundaries of the Secondary Zone (Figure 9), defined as the area capable of supporting the panther population in the Primary Zone, but where habitat restoration may be needed (Kautz et al. In Review). Kautz et al. (In Review) also identified, through a least cost path model, the route most likely to be used by panthers dispersing out of south Florida, crossing the Caloosahatchee River, and dispersing into south-central Florida. Kautz et al. (In Review) used ArcView GIS© version 3.3 and ArcView Spatial Analyst© version 2 (Environmental Systems Research, Incorporated, Redlands, California) to construct the least-cost path models and identify optimum panther dispersal corridor(s). The least-cost path models operated on a cost surface that ranked suitability of the landscape for use by dispersing panthers with lower scores indicating higher likelihood of use by dispersing panthers. The lands within the boundaries of the least cost model prediction were defined as the Dispersal Zone (Figure 9). The preservation of lands within this zone is important for the survival and recovery of the Florida panther, as these lands are the dispersal pathways for expansion of the south Florida panther population. The Primary Zone covers 2,270,590 acres (918,895 ha); the Secondary Zone covers 812,104 acres (328,654 ha); and the Dispersal Zone covers 27,883 acres (11,284 ha); providing a total of 3,110,578 acres (1,258,833 ha) (Kautz et al. In Review). The combined acreage of lands within the Primary, Dispersal, and Secondary Zones is 3,110,577 acres (1,258,833 ha) (Kautz et al. In Review).

As part of their evaluation of occupied panther habitat, in addition to the average density estimate of one panther per 27,181 acres (11,000 ha) developed by Maehr et al. (1991a), Kautz et al. (In Review) estimated the present average density during the timeframe of the study, based on telemetry and other occurrence data, to average 1 panther per 31,923 acres (12,919 ha). In the following discussions of the number of panthers that a particular zone may support, the lower number is based on the 31,923 acres (12,919 ha) value (Kautz et al. In Review) and the higher number is based on the 27,181 acres (11,000 ha) value (Maehr et al. 1991a).

Based on these average densities, the Primary Zone could support 71 to 84 panthers; the Secondary Zone 8 to 10 panthers without habitat restoration and 25 to 30 panthers with habitat restoration (existing high quality panther habitat currently present in the Secondary Zone is

estimated at 32 percent of the available Secondary Zone lands); and the Dispersal Zone, 0 panthers. Taken together, the three zones in their current condition apparently have the capacity to support approximately 79 to 94 Florida panthers.

Kautz et al.'s (In Review) assessment of available habitat south of the Caloosahatchee River determined that non-urban lands in the Primary, Secondary, and Dispersal Zones were not sufficient to sustain a population of 240 individuals south of the Caloosahatchee River. However, Kautz et al. (In Review) determined sufficient lands were available south of the Caloosahatchee River to support a population of 79 to 94 individuals (although not all lands are managed and protected).

Southwest Florida Panther Population Goal: As stated previously, the Service's goal for Florida panther conservation in southwest Florida is to locate, preserve and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of a population of 80 to 100 individuals (adults and subadults) south of the Caloosahatchee River. The Service proposes to achieve this goal through land management partnerships with private landowners, through coordination with private landowners during review of development proposals, and through sensitive land management and acquisition programs with Federal, State, local, private, and Tribal partners. The acreages of lands necessary to achieve this goal, based on Kautz et al. (In Review) average density of 31,923 acres (12,919 ha) per panther is 2,551,851 acres (1,032,720 ha) for 80 panthers or 3,189,813 acres (1,290,900 ha) for 100 panthers.

The principle regulatory mechanisms that allow the Service to work directly with private land owners during review of development and land alteration projects are through section 7 and section 10 consultations under ESA. Section 7 consultations, which are the more common consultations, are primarily with the Corps. In August 2000, the Service, to assist the Corps in assessing project effects to the Florida panther, developed the Florida panther final interim Standard Local Operating Procedures for Endangered Species (SLOPES) (Service 2000). The Florida panther SLOPES provide guidance to the Corps for assessing project effects to the Florida panther and recommends actions to minimize these effects. The Florida panther SLOPES also includes a consultation area map (Figure 4) that identifies an action area where the Service believes land alteration projects may affect the Florida panther and is used by the Corps project managers in evaluating consultation needs with the Service.

Compensation Recommendations: To achieve our goal to locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of a population of Florida panthers south of the Caloosahatchee River, the Service chose the mid point (90 panthers) in Kautz et al.'s (In Review) population guidelines that a population of 80 to 100 panthers is likely to be stable, although subject to genetic problems, through 100 years. More importantly, a population of 90 individuals is eight individuals greater than a population of 82 individuals, which according to the best available PVA (Root 2004) is 95 percent likely to persist over 100 years (assuming a 50:50 male to female ratio). These eight individuals provide a buffer for some of the assumptions in Root's (2004) PVA. Our process to determine compensation recommendations for project affects that cannot be avoided in both our section 7 and section 10 consultations is based on the amount and quality of habitat that we believe is necessary to support a population of 90 panthers in southwest Florida.

The Service, based on Kautz et al.'s (In Review) average panther population density of 31,923 acres per panther determined 2,873,070 acres of Primary Zone "equivalent" lands need to be protected and managed. This equivalency factor is needed, since Secondary Zone lands are of less value than Primary Zone lands to the panther, to assure that additional acreage (special consideration) is required in the Secondary Zone to compensate for its lower quality panther habitat. In other words, more than 31,923 acres per panther would be needed, hypothetically, if this acreage were all in the Secondary Zone (see discussion of Primary Zone equivalent lands in the Effects of the Action). The combined acreage of lands within the Primary, Dispersal, and Secondary Zones is 3,110,577 acres (1,258,833 ha) (Kautz et al. In Review). Currently, 2,094,988 acres of Primary Zone equivalent lands are preserved, so 778,082 additional acres need to be preserved to support a population of 90 panthers in south Florida (2,873,070 minus 2,094,988 equals 778,082).

The SLOPES consultation area map as previously discussed, included lands north of the Caloosahatchee River and "Other" Zone lands. Since the Service's southwest Florida panther conservation goal is to focus on habitat conservation in the Primary, Secondary, and Dispersal Zones, which are south of the Caloosahatchee River, conservation recommendations for projects south of the Caloosahatchee River are restricted to south of and conservation recommendations for projects north of the Caloosahatchee River are restricted to north of the Caloosahatchee River, respectively.

To evaluate project effects to the Florida panther, the Service considers the contributions the project lands provide to the Florida panther, recognizing not all habitats provide the same functional value. Kautz et al. (In Review) also recognized not all habitats provide the same habitat value to the Florida panther and developed cost surface values for various habitat types, based on use by and presence in home ranges of panthers. The FWC (In Review), using a similar concept, assigned likely use values of habitats to dispersing panthers. The FWC's habitats were assigned habitat suitability rank between 0 to 10, with higher values indicating higher likely use by dispersing panthers.

The Service chose to evaluate project effects to the Florida panther through a similar process. We incorporated many of the same habitat types referenced in Kautz et al. (In Review) and FWC (In Review) with several adjustments to the assigned habitat use values reflecting consolidation of similar types of habitats and the inclusion of Everglades Restoration water treatment and retention areas. We used these values as the basis for habitat evaluations and the recommended compensation values to minimize project effects to the Florida panther (Table 3) (see the detailed discussion of the application of the habitat assessment methodology in the Environmental Baseline).

ENVIRONMENTAL BASELINE

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions, which occur simultaneously with the consultation in progress.

Status of the Species within the Action Area

As stated previously, for the purposes of this consultation, the action area includes the Corps' project area and surrounding lands frequently visited by panthers (Figure 4). The action area is a subset of the current geographic range of the panther and includes those lands that the Service believes may experience direct and indirect effects from the proposed development. Therefore, for both direct and indirect effects, the action area is defined as all lands within a 25-mile radius of the project. This action area does not include urban lands, lands east of the protective levee, and lands that are outside of the Service's panther consultation area. The proposed action may have direct and indirect effects on the ability of panthers to breed, feed, and find shelter, and to disperse within the population.

The Service used current and historical radio-telemetry data, information on habitat quality, prey base, and evidence of uncollared panthers to evaluate panther use in the action area. Panther telemetry data are collected 3 days per-week from fixed-wing aircraft, usually in early to midmorning. However, researchers have shown that panthers are most active between dusk and dawn (Maehr et al. 1990a; Beier 1995) and are typically at rest in dense ground cover during daytime monitoring flights (Land 1994). Therefore, telemetry locations may present an incomplete picture of panther activity patterns and habitat use (Comiskey et al. 2002). In addition, telemetry data alone may be misleading since less than half of the panther population is currently monitored.

Although telemetry data may not provide a complete picture of panther activity patterns, telemetry locations are a good indicator, due to the extensive data set, of the approximate boundaries of home ranges, panther travel corridors, and the range of Florida panthers south of the Caloosahatchee River. The FWC also uses observational data collected during telemetry flights to assess the yearly breeding activity of radio-collared panthers. Female panthers accompanied by kittens or male panthers within close proximity of an adult female were assumed to have engaged in breeding activity during that year. Documentation by Land et al. (FWC 2005) shows that between July 2004 and June 2005, only one Florida panther (male #125) which was captured on February 13, 2004, traveled within 5 miles of the project site. He ranged eastward from the loop road area of BCNP just under the current L-67 extension and then northeastward in a semi-circle motion ending near the cross section of Krome Avenue and Tamiami Trail (Figure 5).

There have been a total of 5 panthers (4 male and 1 female) recorded within 5 miles of the project site on 117 occasions using telemetry data from February 1989 though June 2005 (Figure 6). This translates to an average of 7.3 occurrences per year, which equates to an average of one occurrence every 50 days. Several telemetry records indicate that one or more of the four panthers ranged very near to Tamiami Trail and most likely within the construction footprint located around the eastern bridge. Four of the five panthers are no longer alive. All four panthers (FP 16-male, FP 27-female, FP 42-male and FP 85-male) died of unknown causes and none had ranged within 5 miles of the project area since 2001. Four panthers have been involved in vehicle collisions within the 25-mile action area (Figure 5). Three of the four deaths occurred as a result of vehicle strikes on Tamiami trail west of the project area (FP 26-male

(1998), FP 62-female (2004), and FP 71-male (2005). The most recent of these collisions took place just east of 11 Mile Road which is roughly 10 miles west of the western bridge location. The status and activities of uncollared Florida panthers within the action area are unknown.

Factors Affecting Species Environment within the Action Area

Factors that affect the species environment (positive and negative) within the action area include, but are not limited to, highway, urban, agriculture, resource extraction, public lands management (prescribed fire, public use, exotic eradication, etc.), hydrological restoration projects, public and private land protection efforts, effects of genetic inbreeding, and genetic restoration.

Development activities may result in avoidance or limited use of remaining suitable habitat by panthers as well as habitat loss, habitat fragmentation, habitat degradation, and also an increase in risk of vehicular collision (*e.g.*, injury or death).

Public and private land management practices can have a positive, neutral, or negative effect, depending on the management goals. Land protection efforts will help to stabilize the extant population. Hunting of the panther is no longer sanctioned, although there still may be instances of intentional or unintentional shooting of individuals for various reasons.

EFFECTS OF THE ACTION

This section analyzes the direct and indirect effects of the project on the Florida panther and Florida panther habitat.

Factors to be Considered

Residential, commercial, and industrial development projects may have a number of direct and indirect effects on the Florida panther and panther habitat. Direct impacts, which are primarily habitat based, may include: (1) the permanent loss and fragmentation of panther habitat; (2) the permanent loss and fragmentation of habitat that supports panther prey; (3) the loss of available habitat for foraging, breeding, and dispersing panthers; and (4) a reduction in the geographic distribution of habitat for the species. Indirect effects may include: (1) an increased risk of roadway mortality to panthers traversing the area due to the increase in vehicular traffic; (2) increased disturbance to panthers in the project vicinity due to human activities; (3) the reduction in panther prey; (4) the reduction in value of panther habitat adjacent to the project due to habitat fragmentation; and (5) a potential increase in intraspecific aggression between panthers (and an increase in mortality of subadult male panthers) due to reduction of the geographic distribution of habitat for the panther. These indirect effects are habitat based, with the exception of vehicular mortality, which could result in lethal “take.” Intraspecific aggression, though habitat based, could also result in lethal “take.”

This project site contains marginal quality panther habitat and is located on the edge of occupied panther habitat and panther habitat value has been diminished by the encroachment of exotic vegetation and its proximity to a major roadway. The timing of construction for this project, relative to sensitive periods of the panther’s lifecycle, is unknown. Panthers have the potential to

be found on and adjacent to the proposed construction footprint year-round but are less likely during the rainy season when water levels could be considerably higher in NESS. The project will be constructed in a single, disruptive event, and result in permanent loss and alteration of a portion of the existing ground cover on the project site. The project will also result in the conversion of roadway embankment back into usable panther habitat and also provide wildlife passages in the form of bridges. The time required to complete construction of the project is not known.

Analyses for Effects of the Action

The 40.3-acre Tamiami Trail construction footprint is located along a 10.7-mile corridor just south of US 41 in the Florida panther Primary Zone as designated by Kautz et al. (In Review), and is located inside the panther consultation area as defined by the Service (2000). The site currently provides habitat of marginal quality for the Florida panther. The project site is located on the edge of occupied habitat, is adjacent to a major roadway, and is not located within known dispersal corridors (FWC In Review) between larger publicly owned managed lands. The project will result in the conversion of 20.6 acres of marginal quality panther habitat on-site into shoulder of the existing roadway.

Compensation for the loss of 20.6 acres of marginal quality panther habitat will be through the off-site protection and restoration of approximately 30 acres or the equivalent of 270 Habitat Units (HU) of similar quality habitat in the core habitat area (Figure 3) and Primary Zone (Kautz et al. In Review) of the Florida panther. These "core area" lands include the majority of home ranges of the current population of the Florida panther (see definition of core panther area in Effects of the Action – Primary Equivalent Lands). Off-site compensation is located in an area with a moderate level of documented panther usage (telemetry data) in replacement for the loss of 108 HUs in an area bordered by a major highway and exhibiting lower documented panther usage (telemetry data).

Habitat Assessment: In this section, we assess habitat compensation recommended to offset project impacts to Florida panther habitat. Through the methodology described below, we assess how to compensate when habitat loss or degradation resulting from a proposed project cannot be avoided and when adverse effects have been minimized, but loss will still occur. The purpose of this assessment is to ensure that adequate compensation will occur to prevent any significant reductions in the likelihood of survival and recovery of the species due to habitat loss. The Service, in coordination with the Corps, agreed to evaluate the project's effects to the Florida panther through a habitat assessment methodology that incorporates many of the habitat importance values referenced in Kautz et al. (In Review) and FWC (In Review). Our analysis evaluates habitats from 0 to 10 with low scores reflecting low habitat value to the Florida panther (Table 3). The habitat suitability scores as developed by the Service incorporate a direct calculation per acre with a base ratio (2.5) multiplier to compensate for unavoidable project effects to the Florida panther.

Our process to determine compensation is based on the amount of habitat that we believe is necessary to support a population of 90 panthers in south Florida, which is the mid-point (90 panthers) in Kautz et al.'s (In Review) management guidelines that a population of 80 to

100 panthers is likely to be stable, although subject to genetic problems and assumptions previously stated, through 100 years. More importantly, a population of 90 individuals is eight individuals greater than a population of 82 individuals, which according to the best available PVA (Root 2004) is 95 percent likely to persist over 100 years (assuming a 50:50 male to female ratio). These eight individuals provide a buffer for some of the assumptions in Root's (2004) PVA. The Service, based on Kautz et al.'s (In Review) average panther population density of 31,923 acres per panther, determined 2,873,070 acres of Primary Zone equivalent lands (see discussion of Primary Zone equivalent lands below) need to be protected and managed. Currently, 2,094,988 acres of Primary Zone equivalent lands are preserved, so 778,082 additional acres need to be preserved to support a population of 90 panthers in south Florida (2,873,070 minus 2,094,988 equals 778,082).

Primary Zone Equivalent Lands: Kautz et al. (In Review), through their habitat evaluation of lands important to the Florida panther, identified three sets of lands, *i.e.*, Primary Zone, Secondary Zone, and Dispersal Zone, and documented the relative importance of these lands to the Florida panther. These lands generally referred to as the core area, include the majority of the home ranges of the current population of the Florida panther. The Service, in our evaluation of habitat needs for the Florida panther expanded the boundaries of the Kautz et al. (In Review) core area to include those lands south of the Calooshatchee River where additional telemetry points historically were recorded. These additional lands, referred to as the "Other Zone," added to the lands in Kautz et al.'s (In Review) core lands are referred to by the Service as the Core Area (Figure 3). The "Other" Zone lands, as well as the lands within the Secondary Zone, provide less landscape benefit to the Florida panther than the Primary and Dispersal Zones, but are important as a component of our goal to preserve and restore sufficient lands to support a population of 90 panthers in south Florida. To account for the lower landscape importance of these lands in our preservation goals and in our habitat assessment methodology, we assigned lands in the Other Zone a value of 1/3 and lands in the Secondary Zone a value of 2/3 to convert these lands to Primary Zone value, *i.e.*, Primary Zone equivalents (Table 4). Dispersal Zone lands are considered equivalent to Primary Zones lands with a 1/1 value. For example, non-urban at-risk lands in the Other Zone total 819,995 acres, multiply these by 1/3 to determine the acres of Primary Zone equivalent lands the Other Zone can provide (819,995 times 1/3 equals 273,332 acres of Primary Zone equivalent lands). Using this assessment, the 471,466 acres of Secondary Zone lands equate to 314,297 acres of Primary Zone equivalent lands. These equivalent values, 1/3 and 2/3, for Other and Secondary Zones, respectively, and 1/1 for Dispersal Zone, are important components in our assessment of compensation needs for a project in the panther consultation area and are components of our habitat assessment methodology as discussed below.

Base Ratio: To develop a base ratio that will provide for the protection of sufficient acreage of Primary Zone equivalent lands for a population of 90 panthers from the acreage of Primary Zone equivalent non-urban lands at risk, we developed the following approach.

The available non-urban Primary Zone equivalent lands in the core area (Figure 3) are estimated at 3,272,493 acres (actual acreage is 4,486,364 acres [the "actual acreage" value includes acres of lands in each category in the Secondary and Other Zones as well as the lands in the Primary Zone]) (Table 4). Currently 2,094,988 acres of Primary Zone equivalent lands (actual acreage is

2,605,046 acres) of non-urban lands are preserved. The remaining non-urban at-risk private lands are estimated at 1,177,506 acres of Primary Zone equivalent lands (actual acreage is 1,881,318 acres). To meet the protected and managed lands goal for a population of 90 panthers, an additional 778,082 acres of Primary Zone equivalent lands are needed. The base ratio is determined by dividing the acres of at-risk habitat to be secured (778,082 acres) by the result of the acres of at-risk habitat in the Primary Zone (568,549 acres) times the value of the Primary Zone (1); plus the at-risk acres in the Dispersal Zone (21,328 acres) times the value of the Dispersal Zone (1); plus the at-risk acres in the Secondary Zone (471,446 acres) times the value of the Secondary Zone (2/3); plus the at-risk acres in the Other Zone (819,995 acres) times the value of the Other Zone (1/3); minus the at-risk acres of habitat to be protected (778,082 acres). The results of this formula provide a base value of 1.95.

778,082 / ([568,549 x 1.0] + [21,328 x 1] + [471,446 x 0.667] + [819,995 x 0.333]) – 778,082 = 1.95

In evaluating habitat losses in the consultation area, we used an estimate of 0.8 percent loss of habitat per year (R. Kautz , FWC, personal communication, 2004) to predict the amount of habitat loss anticipated in south Florida during the next 5 years (*i.e.*, 6,000 ha / year; 14,820 acres / year for the five county area). The 0.8 percent is based on an analysis that compared the panther potential habitat model (Cox et al. 1994) to 1986-1996 land use changes in five southwest Florida counties, which yielded an estimate of the rate of habitat loss at 0.82 percent per year. We assumed that half of the projects would occur in the Primary Zone and half would occur in the Secondary Zone. We then adjusted the base ratio slightly higher than the 1.95 to 2.25 to account for unexpected increases in habitat loss.

We also realize that, collectively, habitat losses from individual single-family residential developments will compromise the Service's goal to secure sufficient lands for a population of 90 panthers. We believe that, on an individual basis, single-family residential developments by individual lot owners on lots no larger than 2.0 ha (5.0 acres) will not result in take of panthers on a lot-by-lot basis; however, collectively these losses may impact the panther. Compensation for such small-scale losses on a lot-by-lot basis is unlikely to result in meaningful conservation benefits for the panther versus the more holistic landscape level conservation strategy used in our habitat assessment methodology. To account for these losses, we adjusted the base value from 2.25 to 2.5, which is our base ratio.

The Service intends to re-evaluate this base ratio periodically and adjust as needed to achieve the Service's conservation goal for the Florida panther.

Landscape Multiplier: As discussed previously in the above section on Primary Zone Equivalent Lands, the location of a project in the landscape of the core area of the Florida panther is important. As we have previously discussed, lands in the Primary and Dispersal Zones are of the most importance in a landscape context to the Florida panther, with lands in the Secondary Zone of less importance, and lands in the Other Zone of lower importance. These zones affect the level of compensation the Service believes is necessary to minimize a project's effects to Florida panther habitat. Table 5 provides the landscape compensation multipliers for various compensation scenarios. As an example, if a project is in the Other Zone and compensation is proposed in the Primary Zone, a Primary Zone equivalent multiplier of 1/3 is applied to the

habitat units (see discussion of habitat units below) developed for the project. If the project is in the Secondary Zone and compensation is in the Primary Zone, then a Primary Zone equivalent multiplier of 2/3 is applied to the habitat units developed for the project.

Habitat Units: Prior to applying the base ratio and landscape multipliers discussed above, we evaluate the project site and assign functional values to the habitats present. This is done by assigning each habitat type on-site a habitat suitability value from the habitats shown in Table 3. The habitat suitability value for each habitat type is then multiplied by the acreage of that habitat type resulting in a number representing HUs. These HUs are summed for a site total, which is used as a measurement of the functional value the habitat provides to Florida panthers. This process is also followed for the compensation sites.

Exotic Species Assessment: Since many habitat types in south Florida are infested with exotic plant species, which affects the functional value a habitat type provides to foraging wildlife species (*i.e.*, primarily deer and hog), we believe the presence of these species and the value these species provide to foraging wildlife needs to be considered in the habitat assessment methodology. As shown in Table 3, we have a habitat type and functional value shown for exotic species. This category includes not only the total acres of pure exotic species habitats present but also the percent-value acreages of the exotic species present in other habitat types.

For example, a site with 100 acres of pine flatwoods with 10 percent exotics would be treated in our habitat assessment methodology as 90 acres of pine flatwoods and 10 acres of exotics. Adding another 100 acres of cypress swamp with 10 percent exotics would change our site from 90 acres of pine flatwoods and 10 acres of exotics to 90 acres of pine flatwoods, 90 acres of cypress swamp, and 20 acres of exotics.

Habitat Assessment Methodology Application: The application of the habitat assessment methodology including the base ratio, landscape multiplier, HU determinations, and compensation recommendations, are presented below for the Tamiami Trail and compensation areas.

Table 6 illustrates the HU calculations for the Tamiami Trail project with impacts to 40.3 acres of land in the Primary Zone with compensation provided by preservation and enhancement of approximately 30 acres in the Primary Zone. Calculations show the 40.3-acre on-site impact area to presently support 108 HUs before applying a landscape compensation multiplier. Since the project is located in the Primary Zone and compensation is in the Primary, the base ratio HUs are adjusted by the landscape compensation multiplier of (108 x 2.5), to provide a combined recommended compensation need of 270 HUs.

The 30-acre compensation site provides for 270 HUs with restoration. Therefore, the Service believes the habitat values lost by the proposed development will be offset by the compensation actions proposed by the Corps. The lands proposed for construction are on the edge of occupied habitat and panther habitat value has been diminished by the presence of exotic vegetation and the close proximity to a major roadway. Lands proposed for preservation will be in the Primary Zone, adjacent to other natural lands, and will be consistent with the Service's panther goal to

strategically locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the Florida panther population south of the Caloosahatchee River.

Wildlife Assessment: As discussed previously in the status of the species and in the environmental baseline, the Service believes the existing habitat conditions present on a site and the foraging value that a site provides to the Florida panther and panther prey species are an important parameter in assessing the importance of the project site to the Florida panther and other wildlife species. In order to assess this importance, the Service requires wildlife surveys and plant species compositions as part of the Corps' biological assessment prepared for the project. To assess the foraging value of the project site the Service relied on an inter-agency Wetland Rapid Assessment Procedure (WRAP) and road mortality studies conducted by the Service along Tamiami Trail. The complete findings of both of these studies can be found in the Final Fish and Wildlife Coordination Act Report and supplements to that report (Service 2003, 2005). Very few mammals of the size sufficient for panthers (*i.e.*, deer, hogs, etc) were identified in road mortality studies along the trail. An occasional raccoon and opossum were encountered. Similarly, no prey or signs of prey sufficient for panthers was observed (*e.g.*, scat or tracks) on-site during WRAP assessments.

As discussed previously, white-tailed deer densities and other prey species are influenced by the quality of the foraging habitat present in an area. Monotypic stands of poor quality foraging plant species and the invasion of a site by exotic plants provide lower habitat foraging values and affect the utilization by and density of foraging species. The habitats in the project area have experienced similar vegetation changes. The site consists of a mixture of native and disturbed communities with an exotic coverage, primarily Brazilian pepper, varying from 30 percent to more than 50 percent in some locations.

Deer densities in the wet prairie/tree island complex of BCNP and ENP have been estimated by Labisky et al., 1995, to be 3.5-4.0 deer per 247 acres and 4.5-5.0 deer per 247 acres respectively. These densities are lower than those found in northern Florida and other parts of the white-tail range, most likely due to the limited production of quality forage in the Everglades wetlands. The Tamiami Trail project site is located in the deeper portions of NESS which further limits the production of quality browse for deer.

Deer are ruminants with small stomach capacities and are selective for high quality forage to meet their nutritional needs. To meet these high quality forage needs, deer selectively move through the mosaic of habitat types taking advantage of the seasonal forage that provide the most benefit to the deer. The invasion of habitats along the Tamiami Trail by exotics have resulted in the growth unpalatable plant species that provide poor quality foraging needs for resident deer, hog, and other prey species.

The proposed compensation site is located within the 8.5 SMA in southwestern Miami-Dade County. The 8.5 SMA project is an integral feature of MWD which when complete will provide restorative flows and hydropattern to NESS. Upon implementation of MWD as authorized, the net increase in water introduced to NESS would potentially raise elevations of ground water in the adjacent 8.5 SMA. As a result, the volume of storage of ground water available to retain

runoff form rainfall would be reduced. This would raise the potential for flooding impacts. Consequently, the ENP Protection and Expansion Act (the MWD authorization) authorized a system to provide mitigation to the area.

The original proposed alignment of the flood mitigation works for the 8.5 SMA included an outer levee and seepage canal alignment on the western boundary of the 8.5 SMA. In preparation for construction of this alternative, the "recommended plan" in the 1992 General Design Memorandum, the Corps acquired privately owned lands along the levee alignment. That portion of those acquired lands that fell into the ENP land acquisition area is under transfer or has been transferred to ENP. A total of 868 acres of short-hydroperiod marl marsh located in core panther habitat, were so preserved and added to the Park. The formerly proposed levee will not be built, and these lands are in natural short-hydroperiod marsh. Lands now proposed for levee and/or seepage canal construction are former residential plots of low value as panther habitat.

In 2000, the GDM was revised with the identification of a new Recommended Plan (Alternate 6D, Figure 9), and additional lands were identified for restoration totaling 2,280 acres. These lands have either already been acquired or are in the process of acquisition via willing sellers or condemnation, for construction of the 8.5 SMA plan. They will be transferred to the South Florida Water Management District and will be restored. This acreage represents former farm/residential lands that will be restored to natural marshes. There are a few tree islands included in these lands that with the removal of residences, businesses, and farms, will provide additional habitat for panthers.

Compensation for the loss of 20.6 acres impacted during the raising of Tamiami Trail will be achieved through the acquisition and preservation of 30 of the afore mentioned 3,148 acres in the 8.5 SMA. Wetland function and vegetation at the compensation site have been affected by reduced hydroperiod due to its proximity to the L-31N Canal and the absence of historical sheetflow through NESS. This site will receive hydrological restoration and enhancement of the wetlands on-site via restoration of sheetflow to the area and removal of exotic species. melaleuca (*Melaleuca quinquenervia*) and, to a lesser extent, Brazilian pepper are present on-site. Removal of these species will directly benefit the native vegetation on-site and will yield quality forage to panther prey species, especially resident deer populations.

Conservation Measures: The beneficial effects of the project include the preservation and enhancement of approximately 30 acres within the 8.5 SMA. This site is also located in the Primary Zone and overlaps with some of the home ranges of panther that inhabit the eastern side of Shark Slough in ENP. The habitat quality provided to the Florida panther through preservation and enhancement is superior to that of the areas to be impacted. Enhancement in hydrological restoration of sheetflow to acres of disturbed marl marsh along with the eradication of exotic vegetation, primarily melaleuca, and to a lesser degree, Brazilian pepper, will improve suitability for the panther primarily through the resultant improvement in panther prey base. There have been several telemetry locations of panthers recorded on the periphery and just west of the compensation area during the period of record. Within a 3.5-mile range of the proposed compensation site, there have been a total of 165 records for four individual panthers:

FP 16-male, FP 42-male, FP 61-F, and FP 85-male (Figure 10). Three of these panthers are now dead from unknown causes. The remaining cat FP 85-female was last recorded within 3 miles of the compensation site in August 2002. The Service considers the compensation site to be a valuable area for breeding, foraging, and dispersal habitat that is important to panthers located on the eastern side of NESS. The amount of use of the compensation site and the project site by uncollared panthers is unknown and none have been documented at either site.

Direct Effects

Direct effects are those effects that are caused by the proposed action, at the time of construction, are primarily habitat based, and are reasonably certain to occur. We have identified four types of direct effects that may result from the proposed action. The four types include: (1) the permanent loss and fragmentation of panther habitat; (2) the permanent loss and fragmentation of habitat that supports panther prey; (3) the loss of available habitat for foraging, breeding, and dispersing panthers; and (4) a reduction in the geographic distribution of habitat for the Florida panther. Panthers may also be subject to harassment by construction activities. The direct effects this project will have on the Florida panther within the action area are discussed below.

Permanent Loss of Habitat: The project will result in the loss of 20.6 acres of habitat available for occasional use by panthers. The project lands are located inside the panther Primary Zone. The land will be converted to roadway shoulder along the southern edge of the Tamiami Trail. A one-time WRAP and road mortality study did not document site utilization by white-tailed deer, a primary panther prey species; however, a few smaller prey items were identified in the road mortality study. Telemetry shows very little documented panther utilization of the site. Habitat quality is generally poor, as it consists of a mixture of exotic infested native and disturbed communities. Based on the above analysis, we believe the loss of the habitat associated with these lands is insignificant.

Fragmentation of Habitat: Mac et al. (1998) define habitat fragmentation as: "The breaking up of a habitat into unconnected patches interspersed with other habitat which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines." The reference to "unconnected patches" is a central underpinning of the definition. For panther conservation, this definition underscores the need to maintain corridors connecting habitat in key locations of south Florida. The project site is located along a thin corridor adjacent to a major roadway that bisects WCA-3B and ENP. Although no passageway currently exists for panthers to move north and south between these areas, the project as currently proposed would potentially provide 3 miles of safe wildlife passage via two bridges. The remaining obstacles standing in the way of complete reconnection of WCA-3B and NESS are the L-29 canal and the L-29 levee both located just north of and run parallel to Tamiami Trail. Removal of the L-29 levee and land bridges across the L-29 canal were recommended by the Service in its FWCA Reports (Service 2003, 2005). As such, fragmentation of panther habitat and panther prey species habitat is not expected and connectivity could actually be improved by the project.

Road Way Improvements: Improvements to the entire length of the Tamiami Trail, in the form of raising and resurfacing the unbridged portions are proposed in association with the project.

Construction: The timing of construction for this project, relative to sensitive periods of the panther's lifecycle, is unknown. Panthers have the potential to be found on and adjacent to the proposed construction footprint year-round but are less likely to be found there during the rainy season when water levels in Shark Slough are considerable higher. The project will be constructed in a single, disruptive event, and result in permanent loss and alteration of a portion of the existing ground cover on the project site. The time required to complete construction of the project is not known. The disturbance associated with the project will be permanent and result in a loss of marginal habitat currently available to the panther.

Compensation: The Service believes the habitat values lost by the raising of Tamiami Trail will be offset by the preservation and restoration actions in other portions of the MWD project area (8.5 SMA). The lands proposed for construction are on the edge of the panther's occupied range and panther habitat value has been diminished by on-site infestation of exotic vegetation and close proximity to a major roadway. The lands proposed for preservation are consistent with the Service's panther conservation strategy to locate, preserve, and restore sets of lands containing sufficient area, access, and appropriate cover types to ensure the long-term survival of the Florida panther south of the Caloosahatchee River.

Interrelated and Interdependent Actions

An interrelated action is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent action is an activity that has no independent utility apart from the action under consultation. No interrelated or interdependent actions are expected to result from the project.

Indirect Effects

Indirect effects are those effects that result from the proposed action and are reasonably certain to occur. We have identified five types of indirect effects that may result from the proposed action. The five types include: (1) an increased risk of roadway mortality to panthers traversing the area due to the increase in vehicular traffic; (2) increased disturbance to panthers in the project vicinity due to human activities (human/panther interactions); (3) the reduction in panther prey; (4) the reduction in value of panther habitat adjacent to the project due to habitat fragmentation; and (5) a potential increase of intraspecific aggression between panthers due to reduction of the geographic distribution of habitat for the panther.

Increased Risk of Roadway Mortality: In evaluating a project's potential to increase roadway mortality to the Florida panther, we consider the location of the project in relation to surrounding native habitats, preserved lands, and wildlife corridors that are frequently used by the Florida panther. We also consider the current configuration and traffic patterns of surrounding roadways and the projected increase and traffic patterns expected to result from the proposed action. We

evaluate the habitats present on-site, their importance in providing foraging needs for the Florida panther and panther prey species, and if the site development would further restrict access to surrounding lands important to the Florida panther and panther prey species.

The project will not result in an increase in vehicular traffic during construction. Vehicular mortality data provided by the FWC indicate that collisions with motor vehicles are a potential source of panther mortality in the project vicinity (Figure 5); however, due to the lack of increased vehicular traffic associated with the project, it is unlikely that the construction of the Tamiami Trail modifications will increase the risk of roadway mortality to panthers. In actuality, the risk may be reduced as the project will provide wildlife crossings in the form of two bridges (3 cumulative miles). In the future, should the incidence of panther road mortality increase due to the attraction of more animals to the openings in the roadway, other means of deterrence such as fencing should be used to prevent the animals entering the roadway.

Habitat Fragmentation: The project site is adjacent to a major roadway which bisects and eliminates connectivity between WCA-3B and NESS which are considered Secondary and Primary panther habitat respectively. This project, when completed, will provide a crucial first step towards reconnecting these important public lands, therefore, the proposed action will not fragment panther habitat or panther prey habitat.

Panther and Prey Disturbance (Panther/Human Interactions) and Intraspecific Aggression: Potential increases in intraspecific aggression and disturbance to the Florida panther were evaluated. As discussed previously in our assessment of fragmentation, we considered habitat quality related factors and occurrence data for the Florida panther and panther prey species. This information is also the basis of our evaluation of disturbance and intraspecific aggression to the Florida panther and to panther prey species. The Service believes, as previously discussed, the habitats on the construction footprint provide little forage value for prey species, which directly affects the frequency and duration of use of the property by panthers. Therefore, since we do not believe that Florida panthers utilize the property on a frequent basis, the loss of the limited use of the site by panthers will not significantly increase the risk of disturbance to panthers in the project action area due to human activities, will not increase mortality from intraspecific aggression between panthers, and will not significantly increase disturbance to panthers and panther prey species in the project action area.

Species Response to the Proposed Action

The proposed action will result in increased human activity and noise in the project area during construction of the project. However, since panthers are not commonly known to use lands within and adjacent to the project site, activities associated with construction of the administration complex is not anticipated to increase risk of disturbance to panthers.

The project will result in the loss of the small amount (20.6 acres) of potential panther habitat, which represents less than 0.06 percent of a female panther's home range (38,563 acres) and approximately 0.02 percent of a male panther's home range (119,968 acres). Because the project

area provides poor quality panther habitat and panthers are not known to commonly use the project area, we do not expect that the project will significantly affect use of the area by the panther.

Panthers are sensitive to habitat fragmentation. However, the project site is located on the eastern fringe of occupied habitat, is adjacent to a major roadway, and is not located within known dispersal corridors (FWC In Review) between larger publicly owned managed lands. This project may actually restore ecological connectivity between WCA-3B and NESS once complete. Therefore, fragmentation of panther habitat is not expected to result from project implementation.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action but located in the action area are not considered in this section because they require separate consultations pursuant to section 7 of the ESA.

The Corps conducted a cumulative effects analysis using the following assumptions:

1. Additional effects on panther habitat south of Tamiami Trail are limited to ENP and the restored section of the 8.5 SMA, and to any Corps 404 permits issued along Tamiami Trail to either concessionaires or to Tribal villages; but activities inside established Miccosukee villages or the Miccosukee Reserved Area will not affect panther habitat.

2. There are no known further impacts to panther habitat up to 20 miles north of Tamiami Trail in the evaluation zone. These lands are part of the State-owned Everglades and are protected from development. While Comprehensive Everglades Restoration Plan (CERP) projects may affect them in the future, none are currently proposed for construction.

3. This evaluation will not consider structural changes that may be recommended as part of the MWD Combined Structural and Operational Plan, which will undergo its own evaluation when a Preferred Alternative for water management and structural changes is identified.

4. Similarly, this evaluation cannot include potential future modifications to the Trail or structures in the WCA-3s under CERP Decompartmentalization, as that project is still in early conceptual stages.

In evaluating cumulative impacts, the Corps has found no new permits issued in the past 2 years to private interests along the Trail segment. Checks with the Miami-Dade County Department of Environmental Resource Management likewise indicated no permits along this stretch. Tribal interests have utilized a Programmatic General Permit for a cumulative 22.96 acres of fill (mainly expansion of existing house pads) inside the Miccosukee Reserved Area, adjacent to the western end of the project action area. An additional single individual permit was issued for

0.31 acre of fill at a Miccosukee camp located about halfway between 40-Mile Bend and 50-Mile Bend along the Trail. Mitigation for the wetlands loss was by purchase in the Panther Island Mitigation Bank. No private individual or nationwide section 404 or land use permits were found during the period dating from early 2003, along the Trail in Miami-Dade County.

Within the action area, based on the Corps' analysis, two permits affecting approximately 23.3 acres have occurred within the past 2 years; however, both of these permits were subject to review through the Clean Water Act section 404 and therefore do not fit the definition of cumulative effect. The Corps did not identify any permits within the past 2 years that were exempt from the federal permitting process. For the purpose of this analysis the Service will assume that the 23.3 acres would be exempt from the Federal permit process and furthermore represent the level of development that could be reasonably expected in the future. According to the most current home range estimates of the Florida panther (FWC 2004), this level of development represents 0.06 percent of a female panther home range (38,563 acres) and 0.02 percent of a male panther home range (119,968 acres).

In conclusion, the Corps' cumulative effects analysis has identified approximately 23.3 acres within the action area that could be developed without Federal wetland permit involvement. This level of development, which the Service believes is representative of future non-Federal actions, is reasonably certain to occur and will not involve a Federal action and, therefore, meets the definition of cumulative effect. Based on the above analysis, we believe the loss of the habitat associated with these lands is insignificant.

SUMMARY OF EFFECTS

Panther Usage: The timing of construction for this project, relative to sensitive periods of the panther's lifecycle, is unknown. The start date for construction and the time required to complete construction of the project is not known. According to telemetry data, no panther activity has been recorded on-site within the past 2 years. The status and activities of uncollared Florida panthers within the action area is unknown. There are no known den sites within 5 miles of the project boundaries and the quality and quantity of the foraging prey base is low. Therefore, we believe panther usage of the site is limited and we do not believe project construction will result in direct panther mortality.

Traffic: Although there may be minor changes in vehicular traffic patterns in the project vicinity during construction, we believe as discussed above and in previous sections, the lands on the project site provide limited value to the Florida panther and panther prey species; the site is adjacent to a major roadway. The Service believes, based on the current habitat conditions on the site, the existence of the adjacent roadway, the lack of documented recent use of the site by the Florida panther, and the lack of increased vehicular traffic associated with the project, the project will not significantly increase the risk of roadway mortality or injury to panthers. In fact, the proposed project will provide 3-miles (cumulative) of safe passage for panthers under the Tamiami Trail.

Habitat Loss: The Service, based on the habitat evaluations discussed previously, believes the project will result in the direct loss of 20.6 acres of mostly low quality panther habitat within the Primary Zone. Habitat types are primarily a mixture of exotic infested native and disturbed communities. Lack of wildlife utilization of the site shows limited foraging values to panther prey species. This loss of 20.6 acres of panther habitat represents a negligible percentage of the 1,881,318 acres of available non-urban private lands in the core area. The Service believes this small loss of non-urban public lands adjacent to an existing major roadway will not adversely affect the Service's land conservation and preservation goals.

Compensation: On the other hand, the project will also provide for the preservation of approximately 30 acres of Primary Zone habitat in southwestern Miami-Dade County in the 8.5 SMA which will be protected within ENP and is known to support panthers. Approximately 3,148 acres of disturbed marl marsh and slough habitat including the 30 acre compensation site will be enhanced through hydrological restoration of sheetflow and subsequent eradication of exotic vegetation. Therefore, we believe the preservation of approximately 30 acres of panther habitat in the panther core area will have a beneficial effect on the panther and will offset the loss of lower quality habitat and further the Service's goal in panther conservation.

Fragmentation: The project site is also located on the edge of occupied habitat, is adjacent to a major roadway, and is not located within known dispersal corridors to larger publicly owned and managed lands important to the panther. Therefore, fragmentation of panther habitat is not expected to result from project implementation. In fact, the project will potentially reconnect Primary panther habitat (NESS) and Secondary panther habitat (WCA-3B) via 3 miles of bridge.

Intraspecific Aggression: Potential increase in intraspecific aggression and disturbance to the Florida panther was evaluated. However, the Service believes, as previously discussed, the habitat on the property provides low quality foraging for prey species, which directly affects the frequency and duration of use of the property by panthers. Therefore, the Service believes it is unlikely the loss of this limited use of the site by panthers will significantly increase the risk of mortality from intraspecific aggression between panthers and increase disturbance to panthers in the project action area due to human activities.

Cumulative Analysis: In the cumulative effects analysis, the Corps identified the potential loss of approximately 23 acres in the action area within the immediate past; however, these lands could not be developed without Federal wetland permit involvement. The Service does not anticipate any future land development in the 25 mile action area that would be exempt from the Federal permitting process; however, for the purpose of this analysis we considered 23 acres as the level of development which would represent future non-Federal actions expected to occur in the action area. This level of development represents a small percentage (0.2 percent of the 1,881,318 acres) of available non-urban private lands in the core area. In general, these lands are primarily within previously impacted areas or are in the western more urbanized portion of the Florida panther's consultation area. Although this small percentage of lands may be lost from the core area of private lands available for panther conservation, the Service believes the loss of these lands will not adversely affect the Service's land conservation and preservation goals.

CONCLUSION

In conclusion, the Service believes there will be no direct take in the form of mortality or injury of the Florida panther resulting from this project. The loss of habitat from implementing the project, taking into consideration the status of the species, remaining habitat, and other factors considered in this biological opinion, such as the overall recovery objectives and other cumulative effects from actions in the action area, will be offset by the conservation/restoration of other, more functionally valuable habitat. Therefore, the proposed construction of the Tamiami Trail modification is not likely to jeopardize the continued existence of the Florida panther. No critical habitat has been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking, that is incidental to and not intended as part of the agency action, is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

Although there may be minor and temporary changes to traffic patterns with the construction of the project, we believe as discussed in previous sections, the lands on the project site provide limited value to the Florida panther and panther prey species. Furthermore, the site is adjacent to existing urban development and the proposed action will further restrict suitability of the site for use by either resident or dispersing panthers. The Service believes, based on the current habitat conditions on the site, the proximity to a major roadway, the lack of documented recent use of the site by the Florida panther, and the absence of increases in traffic generated by operation of the proposed project on the surrounding roads, the project will not significantly increase the risk of roadway mortality or injury to panthers. Therefore, the Service does not anticipate the proposed action will result in the direct mortality or injury of any Florida panthers. Accordingly, the Service is not anticipating any direct take in the form of mortality or injury to the Florida panther.

However, the Service anticipates incidental take of panthers in the form of harm and harassment associated with the loss of 20.6 acres of panther habitat within the Primary Zone lands. Based on the analysis provided in the previous sections, the Service believes this level of anticipated take is not likely to result in jeopardy to the species.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined this level of anticipated take is not likely to result in jeopardy to the species. The amount of panther habitat affected by the proposed action is a negligible percentage of an estimated 2 million acres of habitat occupied by the panther.

The proposed action will result in the restoration and preservation of approximately 30 acres of panther habitat in the Florida panther Primary Zone, in southwestern Miami-Dade County. The proposed action will increase the preservation and enhancement acreage of panther habitat through permitted Federal actions by about 0.1 percent from 29,434 acres to approximately 29,464 acres (Table 1). The cumulative increase in the preservation and enhancement of panther habitat to permitted Federal actions will be from 700 acres in 1990 to 29,464 acres.

The proposed action will result in the loss of 20.6 acres of mostly low quality panther habitat. The proposed action will increase the impacts from direct and indirect effects to panther habitat from residential and commercial developments, mining, and agriculture by about 0.0002 percent from 89,402 acres to 89,423 acres. Of the 89,423 acres of impacts, 39,918 acres are due to agricultural conversion and 49,484 acres to development and mining. Portions (10,370 acres) of the largest agricultural conversion project, the 28,700 acres by U.S. Sugar Corporation, were re-acquired by the Federal Government as a component of the Talisman Land Acquisition (Section 390 of the Federal Agricultural Improvement and Reform Act of 1996 [Public Law 104-127] Farm Bill Cooperative Agreement, FB4) for use in the Comprehensive Everglades Restoration Project. The 49,484 acres impacted by development and mining include a mixture of agricultural fields consisting of row crops and citrus groves, and natural lands with varying degrees of exotic vegetation. The non-agricultural impacts are permanent land losses, whereas the agricultural conversions may continue to provide some habitat functional value to panthers, although of less value than native habitats.

The lands proposed for compensation/preservation from the proposed take of panther habitat are lands adjacent to other larger tracts of natural and preserved lands and are consistent with the Service's panther goal to locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the Florida panther south of the Caloosahatchee River. Therefore, based on the evaluations provided above for the project's direct, indirect and cumulative effects, the status of the species, and the compensation proposed by the Corps, the Service believes that the proposed construction and operation of the Tamiami Trail modifications will not jeopardize the survival and recovery of the Florida panther.

REASONABLE AND PRUDENT MEASURES

The Service believes the Corps has incorporated all reasonable and prudent measures necessary and appropriate to minimize impacts of incidental take of Florida panthers into the design of the proposed action. In summary, the Corps will ensure that no more than 20.6 acres of panther habitat will be lost as a result of implementation of the proposed action and that approximately 30 acres in panther Primary Zones will be preserved to benefit the Florida panther and its prey.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline reporting/monitoring requirements. The terms and conditions described below are non-discretionary, and must be undertaken by the Corps for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protection coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement (50 CFR § 402.14(i)(3)).

1. The Corps will adhere to the conservation measures listed below and the description of the proposed action that commits the Corps to purchase, preserve, and manage high quality panther habitat, which is necessary and appropriate to minimize incidental take of panthers by the proposed action. Specifically, to compensate for impacts to 20.6 acres of Florida panther habitat, the Corps proposes to restore and preserve 30 acres in ENP southwester Miami-Dade County. All habitats to be preserved are in the panther Primary Zone;

2. The preservation site will be enhanced through restoration of sheetflow characteristics and more natural hydrologic regimes as outlined in MWD authorization;

3. The Corps will monitor the permit conditions regarding conservation measures to minimize incidental take of panthers by providing the Service a report on implementation and compliance with the conservation measure within 1 year of the start of construction;

4. The Corps will provide documentation to the Service for completion of proposed off-site enhancement and restoration;

5. Upon locating a dead, injured, or sick panther specimen, initial notification must be made to the nearest Service Law Enforcement Office; Fish and Wildlife Service; 9549 Koger Boulevard, Suite 111; St. Petersburg, Florida 33702; 727-570-5398. Secondary notification should be made to the FWC; South Region; 3900 Drane Field Road; Lakeland, Florida; 33811-1299; 1-800-282-8002; and

6. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured panthers or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service is not proposing any conservation recommendations at this time.

REINITIATION NOTICE

This concludes formal consultation on the Tamiami Trail portion of the MWD to ENP project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; (3) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation and effort in protecting fish and wildlife resources. If you have any questions regarding this project, please contact Kevin Palmer at 772-562-3909.

Sincerely yours,

James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:
Corps, Jacksonville, Florida (Dennis Duke, Jon Moulding, Brian Files)
DEP, Tallahassee, Florida (Greg Knecht, Inger Hansen)
District, West Palm Beach, Florida (Paul Linton)
DOI, Miami, Florida (Rock Salt)
DOI, Washington, DC (Don Jodrey)
ENP, Homestead, Florida (Dan Kimball, Bruce Boler)
EPA, Jacksonville, Florida (Eric Hughes)
FWC, Vero Beach, Florida (Joe Walsh, Tim Towles)
Miccosukee Tribe of Indians, Miami, Florida (Billy Cypress)
Service, ARD, Atlanta, Georgia (Noreen Walsh) (electronic copy only)
Service, Jacksonville, Florida (Miles Meyer)
Service, Vero Beach, Florida (Chris Belden) (electronic copy only)

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Table 1. Biological opinions and habitat preservation efforts resulting from consultations with the Service for projects affecting Florida panther habitat from March 1984 through November 2005.

Date	Service Log Number	Corps Application Number	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
03/29/84	4-1-83-195	83M-1317	Ford Test Track	Collier	530	0	0	0
02/21/85	4-1-85-018	unknown	I-75	Broward Collier	1,517	0	0	0
10/17/86	4-1-87-016 4-1-87-017	unknown	Exxon Master Plan	Collier	9	0	0	0
01/07/87	4-1-86-303	86IPM-20130	Citrus Grove	Collier	11,178	0	0	0
01/11/88	4-1-88-029	unknown	NERCO - Clements Energy	Collier	3	0	0	0
02/23/88	4-1-88-055	unknown	Shell Western E&P	Collier Dade Monroe	0	0	0	0
02/10/89	4-1-89-001	FAP IR-75-4(88)81	SR 29/I-75 Interchange	Collier	350	0	0	0
08/15/90	4-1-90-289	unknown	I-75 Recreational Access	Collier	150	0	0	0
09/24/90	4-1-90-212	89IPD-20207	U.S. Sugar Corporation	Hendry	28,740	700	0	700
03/12/91	4-1-91-229	90IPO-02507	Lourdes Cereceda	Dade	97	0	0	0
01/14/92	4-1-91-325	199101279	Dooner Gulf Coast Citrus	Collier	40	40	0	40
09/25/92	4-1-92-340	unknown	STOF, BCSIR Citrus Grove	Hendry	1,995	0	0	0
06/18/93	4-1-93-217	199200393	Corkscrew Road	Lee	107	0	0	0
02/25/94	4-1-94-209	199301131	Daniels Road Extension	Lee	65	0	0	0
05/09/94	4-1-93-251	199202019	Corkscrew Enterprises	Lee	563	437	0	437
10/27/94	4-1-94-430	199302371 199400807 199400808	Florida Gulf Coast University Treeline Boulevard	Lee	1,088	526	0	526
05/24/95	4-1-95-230	199302130	Turner River Access	Collier	1,936	0	0	0
08/07/95	4-1-95-274	199405501	Bonita Bay Properties	Collier	509	491	0	491
08/15/95	4-1-94-214	199301495	SW Florida Airport Access Road	Lee	14	0	0	0
09/19/96	4-1-95-F-230	199302052 199301404	I-75 Access Points	Broward	116	0	0	0
03/10/98	4-1-98-F-3	L30 (BICY)	Calumet Florida	Collier Broward Dade	0	0	0	0
03/27/98	4-1-97-F-635	199604158	Willow Run Quarry	Collier	359	190	0	190
06/11/99	4-1-98-F-398	199800622	STOF Water Conservation Plan	Hendry	1,091	0	0	0

Table 1 (continued).

Date	Service Log Number	Corps Application Number	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
09/27/99	4-1-98-F-310	199130802	Daniels Parkway	Lee	2,093	0	94	94
12/08/99	4-1-98-F-517	199607574	Cypress Creek Farms	Collier	239	0	24	24
04/17/00	4-1-98-F-428	199507483	Miromar	Lee	1,323	0	194	194
06/09/00	4-1-99-F-553	199900619	Naples Reserve	Collier	833	0	320	320
02/21/01	4-1-00-F-135	199803037	Corkscrew Ranch	Lee	106	0	0	0
04/17/01	4-1-00-F-584	200001436	Sun City	Lee	1,183	0	408	408
07/30/01	4-1-94-357	199003460	Naples Golf Estates	Collier	439	175	0	175
08/31/01	4-1-00-F-183	199900411	Colonial Golf Club	Lee	1,083	0	640	640
12/14/01	4-1-00-F-585	199301156	SW Florida Airport	Lee	8,058	0	6,986	6,986
01/30/02	4-1-98-F-372	199402492	Florida Rock	Lee	5,269	802	0	802
03/07/02	4-1-00-F-178	199901251	Southern Marsh Golf	Collier	121	75	80	155
04/24/02	4-1-01-F-148	199901378	Hawk's Haven	Lee	1,531	267	0	267
09/24/02	4-1-01-F-135	200001574	Verandah	Lee	1,456	0	320	320
10/08/02	4-1-02-F-014	199602945	Winding Cypress	Collier	1,088	840	1,030	1,870
05/19/03	4-1-02-F-1741	200200970	Apex Center	Lee	95	10	18	28
06/10/03	4-1-01-F-1955	200003795	Walnut Lakes	Collier	157	21	145	166
06/18/03	4-1-01-F-136	199701947	Twin Eagles Phase II	Collier	593	57	98	155
06/23/03	4-1-01-F-143	199905571	Airport Technology	Lee	116	55	175	230
07/02/03	4-1-98-F-428	199507483	Miromar	Lee	342	158	340	498
09/04/03	4-1-02-F-1486	200206725	State Road 80	Lee	33	2	12	14
10/06/03	4-1-02-F-0027	200102043	Bonita Beach Road	Lee	1,117	145	640	785
12/29/03	4-1-02-F-1743	200202926	The Forum	Lee	650	0	310	310
01/18/05	4-1-04-F-4259	199702228	Bonita Springs Utilities	Lee	79	0	108	108
02/21/03 03/09/05	4-1-01-F-607	200001926	Mirasol	Collier	800	914	145	1,059
03/31/05	4-1-04-F-5656	200306759	Gateway Shoppes II	Collier	82	0	122	122
04/08/05	4-1-04-F-8176	2004-5312	Seminole Mine	Broward	110	0	220	220
04/29/05	4-1-04-F-5780 4-1-04-F-5982	2003-5331 2003-6965	Arborwood and Treeline Avenue	Lee	2,329	0	1,700	1,700
06/06/05	4-1-03-F-7855	2003-11156	Collier Regional Medical	Collier	44	0	64	64

06/14/04 06/21/05	4-1-04-F-5744	199603501	Terafina	Collier	437	210	261	471
02/22/05 03/16/05 06/29/05	4-1-04-F-6866	200309416	Ava Maria DRI	Collier	5,027	0	7,285	7,285
06/29/05	4-1-03-F-3915	199806220	Wenthworth Estates	Collier	917	0	458	458
07/15/05	4-1-04-F-5786	199405829	Land's End Preserve	Collier	231	0	61	61
09/08/05	4-1-04-F-5260	200106580	Parklands Collier	Collier	489	157	434	591
09/23/05 10/26/05	4-1-04-F-9348	200101122	Super Target-Tarpon Bay Plaza	Collier	34	0	20	20
11/14/05	4-1-04-F-6043	20034914	Summit Place	Collier	108	0	61	61
11/15/05	4-1-04-F-8847	20048995	STOF Administrative Complex	Collier	6	0	8	8
12/6/05	4-1-03-F-3483	200302409	SW Florida Commerce Center	Lee	207	0	305	305
12/6/05	4-1-04-F-6691	200310689	Rattlesnake Hammock Road Widening	Collier	23	0	23	23
1/04/06	4-1-04-F-9777	20048577	Logan Boulevard Extension	Collier	30	0	10	10
1/04/06	4-1-04-F-8388	2004554	Immokalee Regional Airport - Phase I	Collier	67	0	43	43
1/12/06	4-1-04-F-5912		Modified Water Deliveries; Tamiami Trail	Miami-Dade	21	0	30	30
				Totals	89,423	6,272	23,192	29,464

Table 2. *Targeted and acquired acreage totals of Conservation Lands in south Florida directly affecting the panther.

Name	Targeted[1] Acreage	Acquired Acreage	Indian Reservation
Federal Conservation Lands			
Everglades National Park	1,508,537	1,508,537	--
Big Cypress National Preserve	720,000	720,000	--
Florida Panther National Wildlife Refuge	26,400	26,400	--
Subtotal	**2,254,937**	**2,254,937**	--
State of Florida: Florida Forever Program			
Belle Meade	28,505	19,107	--
Corkscrew Regional Ecosystem Watershed	69,500	24,028	--
Twelvemile Slough	15,653	7,530	--
Panther glades	57,604	22,536	--
Devil's Garden	82,508	0	--
Caloosahatchee Ecoscape	18,497	2,994	--
Babcock Ranch	91,361	0	--
Fisheating Creek	176,760	59,910	--
Subtotal	**540,388**	**136,105**	**--**
State of Florida: Other State Acquisitions			
Water Conservation Area Number 3	491,506	491,506	--
Holey Land Wildlife management Area	33,350	33,350	--
Rotenberger Wildlife Management Area	25,019	20,659	--
Fakahatchee Strand State Preserve	74,374	58,373	--
Picayune Strand State Forest	55,200	55,200	--
Okaloacoochee Slough State Forest and WMA	34,962	34,962	--
Babcock-Webb Wildlife Management Area	79,013	79,013	--
Subtotal	**793,424**	**773,063**	**--**
Indian Reservations[2]			
Miccosukee Indian Reservation	--	--	81,874
Big Cypress Seminole Indian Reservation	--	--	68,205
Brighton Seminole Indian Reservation	--	--	37,447
Subtotal	**--**	**--**	**187,526**
GRAND TOTALS	**3,588,749**	**3,164,105**	**187,526**

[1] Targeted acres not available for all lands. In Such cases, targeted equals acquired acreage.

[2] Indian lands are included due to their mention in the MSRP. Acreages taken from GIS data.

* Table 2 was excerpted from the Brief of Amicus (2003). However, the lands shown as acquired in this table may include some private in-holdings and may include lands currently under sales negotiations or condemnation actions.

Table 3. Habitat suitability values for use in assessing habitat value to the Florida panther.

Land Cover Type	Value	Land Cover Type	Value	Land Cover Type	Value
Water	0	STA	4.5	Cypress swamp	9
Urban	0	Shrub swamp	5	Sand pine scrub	9
Coastal strand	1	Shrub and brush	5	Sandhill	9
Reservoir	1.5	Dry prairie	6	Hardwood-Pine forest	9
Mangrove swamp	2	Grassland/pasture	7	Pine forest	9
Salt marsh	2	Freshwater marsh	9	Xeric oak scrub	10
Exotic plants	3	Bottomland hardwood	9	Hardwood forest	10
Cropland	4	Bay swamp	9		
Orchards/groves	4	Hardwood swamp	9		

Table 4. Lands within the Core Area (Acres)

	Total			Conserved			At-Risk		
	Total	Urban	Non-urban	Total	Urban	Non-urban	Total	Urban	Non-urban
Primary	2,270,617	20,732	2,249,885	1,688,033	6,697	1,681,336	582,584	14,035	568,549
Dispersal	25,410	675	24,735	3,447	40	3,407	21,963	635	21,328
Secondary	807,428	25,551	781,877	311,208	777	310,431	496,220	24,774	471,446
Other	1,545,655	115,788	1,429,867	613,499	3,627	609,872	932,156	112,161	819,995
Total	4,649,110	162,746	4,486,364	2,616,187	11,141	2,605,046	2,032,923	151,605	1,881,318
Primary equivalents	3,349,530	77,037	3,272,493	2,103,452	8,464	2,094,988	1,246,079	68,573	1,177,506

Table 5. Landscape Compensation Multipliers

Zone of Impacted Lands	Zone of Compensation Lands	Multiplier
Primary	Secondary	1.5
Secondary	Primary	0.667
Other	Secondary	0.5
Other	Primary	0.333

Table 6. Florida Panther Habitat Matrix

Land Cover Types	Habitat Values	Project Footprint 40.3 acres				Off-site Compensation in Primary Zone **30 acres****			
		Functional Units Needed = 270				Functional Units Provided = 270			
Land Cover Type	**Score**	**Pre**		**Post**		**Pre**		**Post**	
		Acres	PHU	Acres	HU	Acres	PHU	Acres	HU
Urban	0	19.4	0	40	0				
Water	0	0.3	0	0.3	0				
Exotics	3	10.3	31						
Shrub Swamp	5	3.9	20						
Freshwater Marsh	9	6.4	58			30	270	30	270
Subtotal		40.3	108		0	30	270	30	270

HUs needed - 108 times the base multiplier of 2.5 equals 270 HUs. Project is in the Primary Zone with compensation in the Primary Zone.

The Corps is providing 270 HUs.

** The Corps is using 270 HUs as compensation for the Tamiami Trail project, leaving 28,062, of 28,332 HUs which are a part of the 8.5 SMA project and are slated to be restored. The excess of 28,062 HUs may be used as compensation for future Corps projects, if determined by the Service to be appropriate.

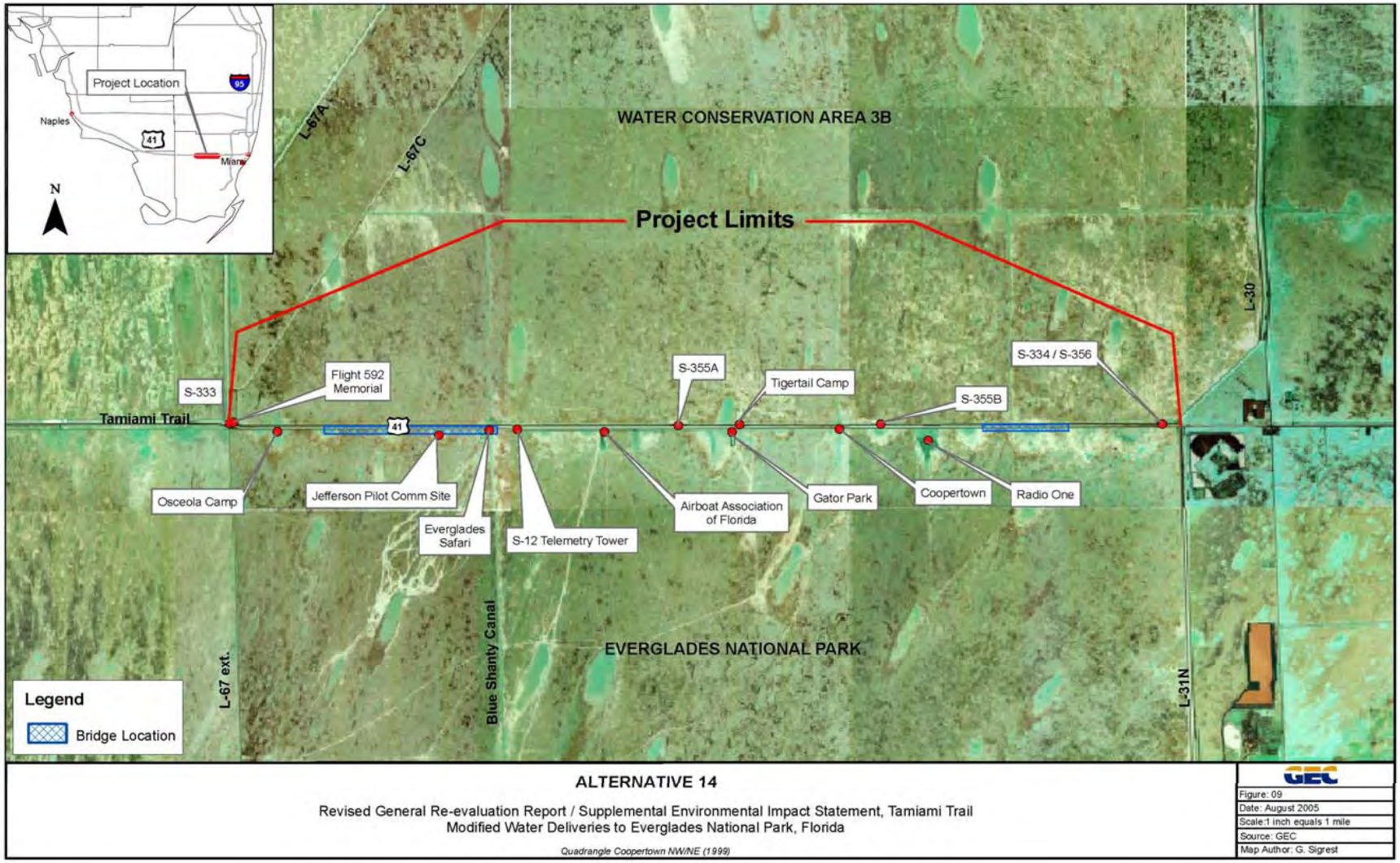

Figure 1. Location map.

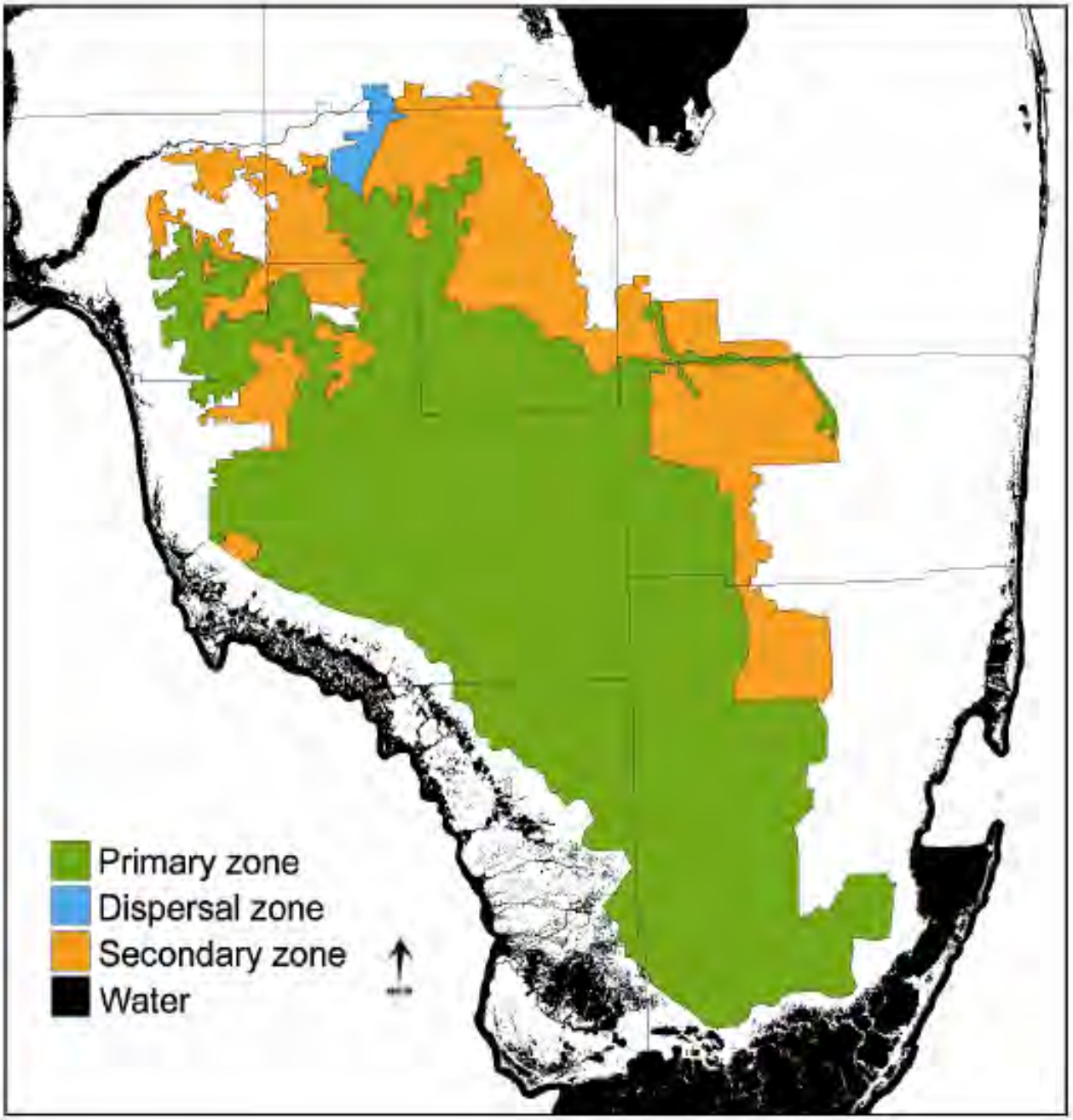

Figure 2. Florida panther zones.

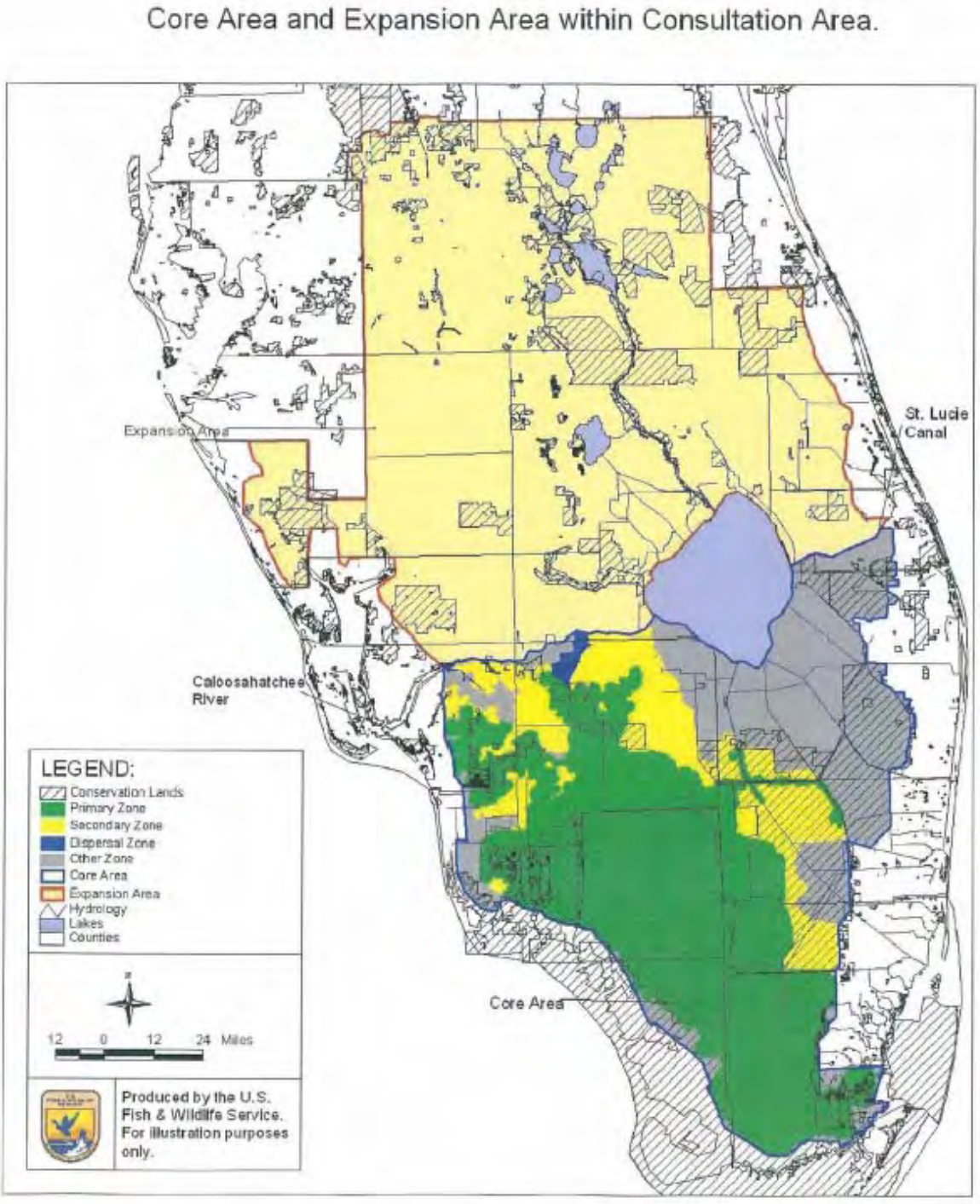

Figure 3. Florida panther core area.

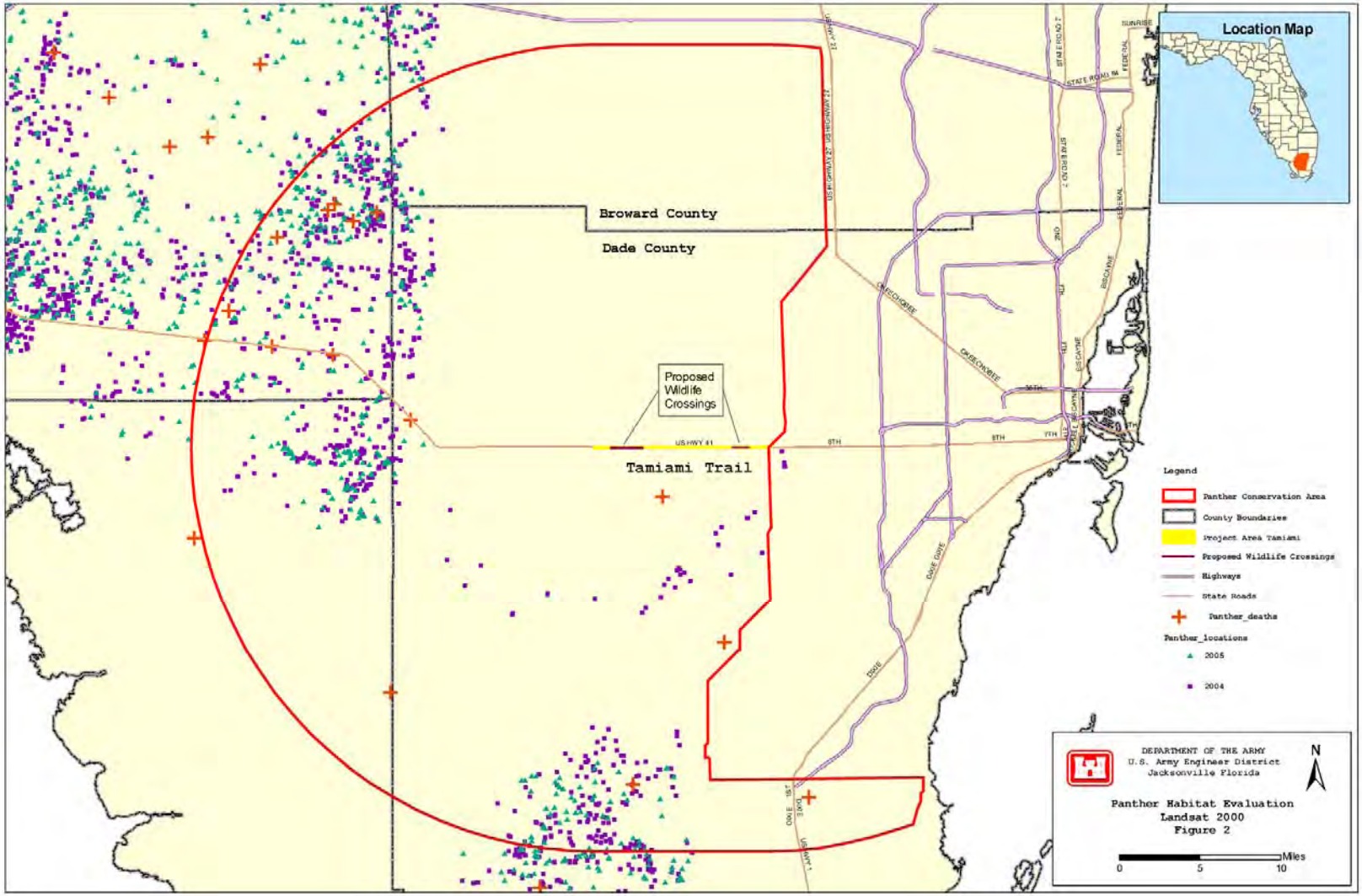

Figure 4. Satellite image showing 25-mile action area and recent (2004-2005) panther telemetry points.

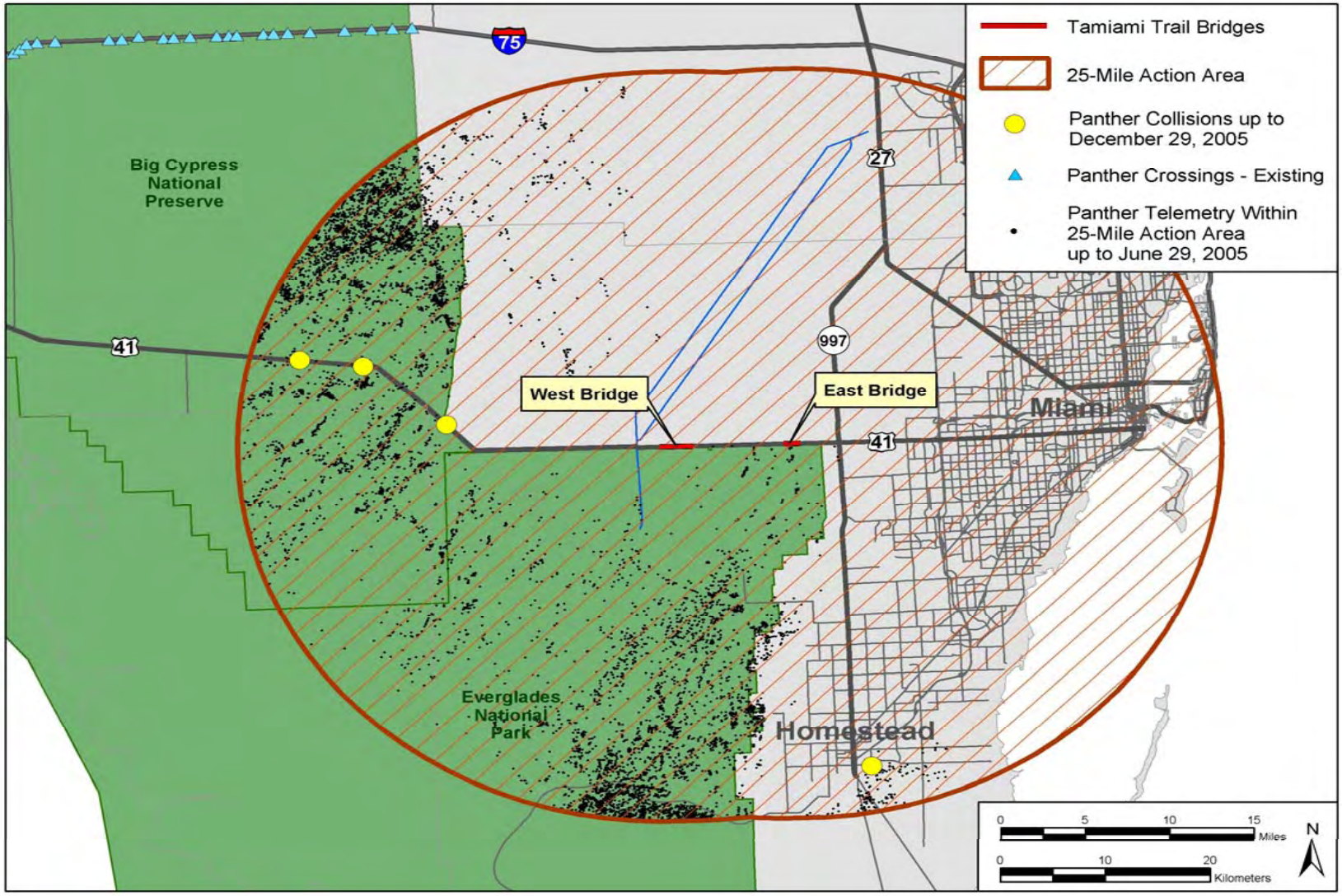

Figure 5. 25-mile action area showing all panther telemetry records, panther collisions, and existing panther crossings.

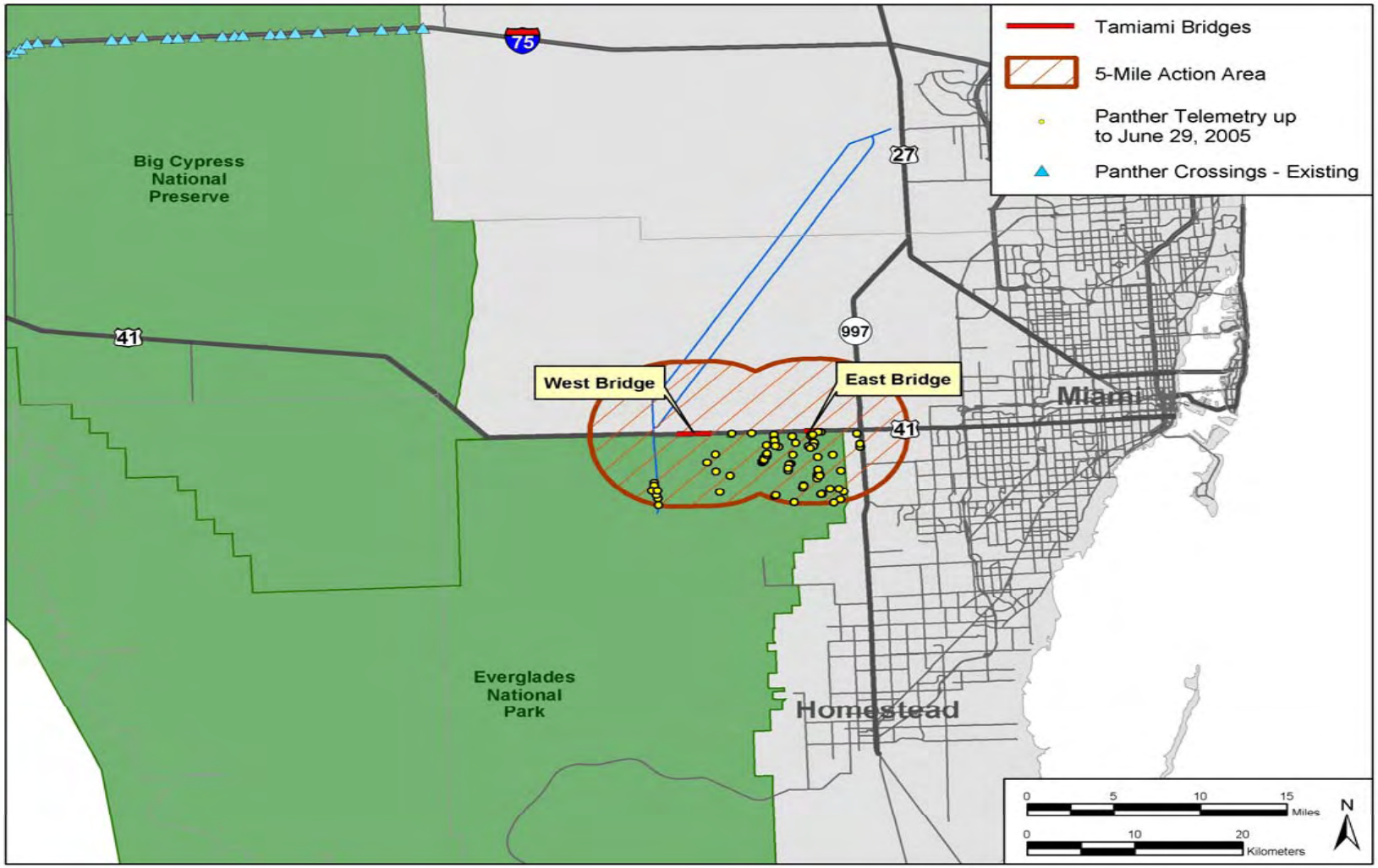

Figure 6. 5-mile action area showing all panther telemetry points

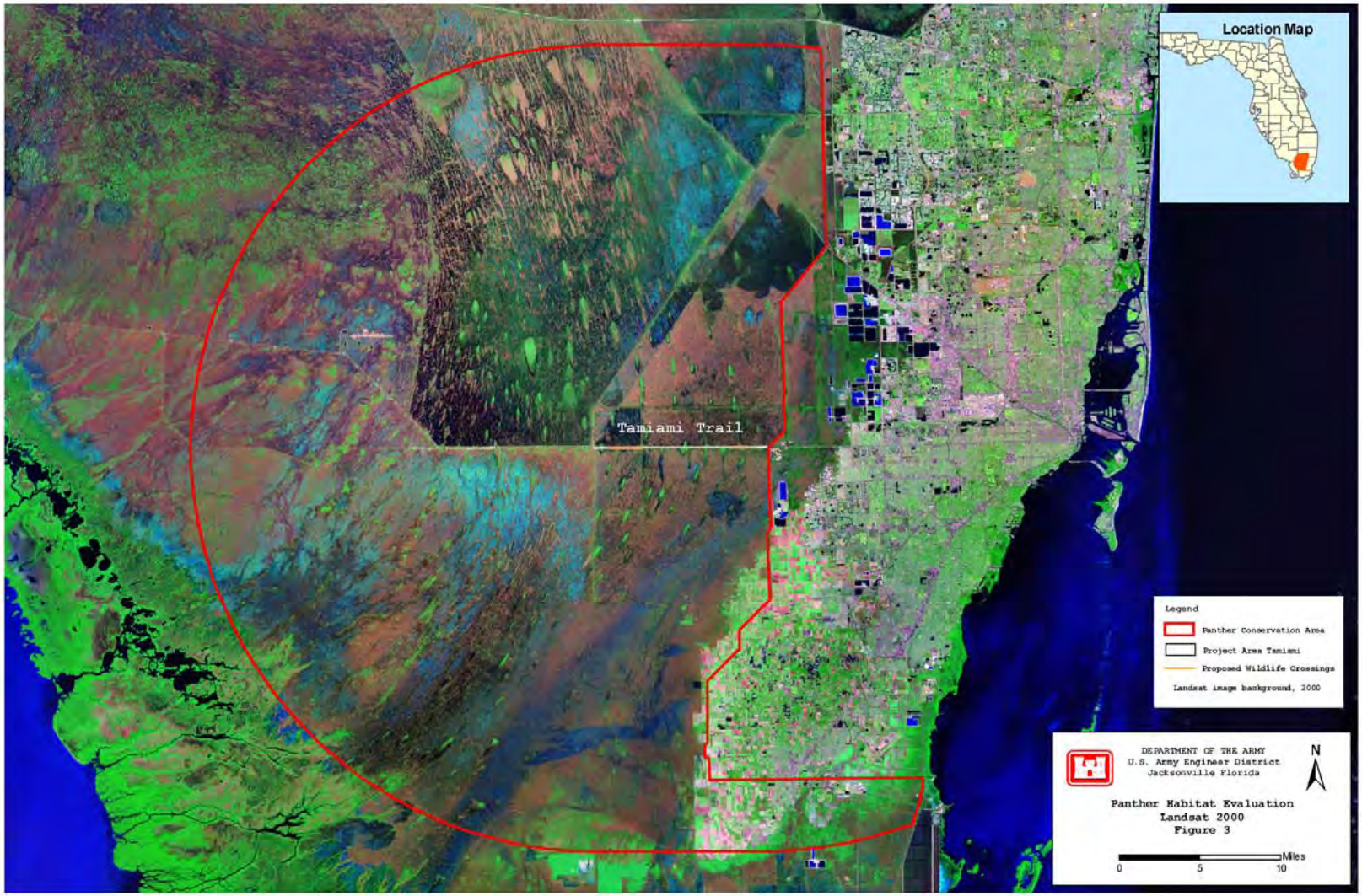

Figure 7. Real color satellite image showing project area and 25-mile action area.

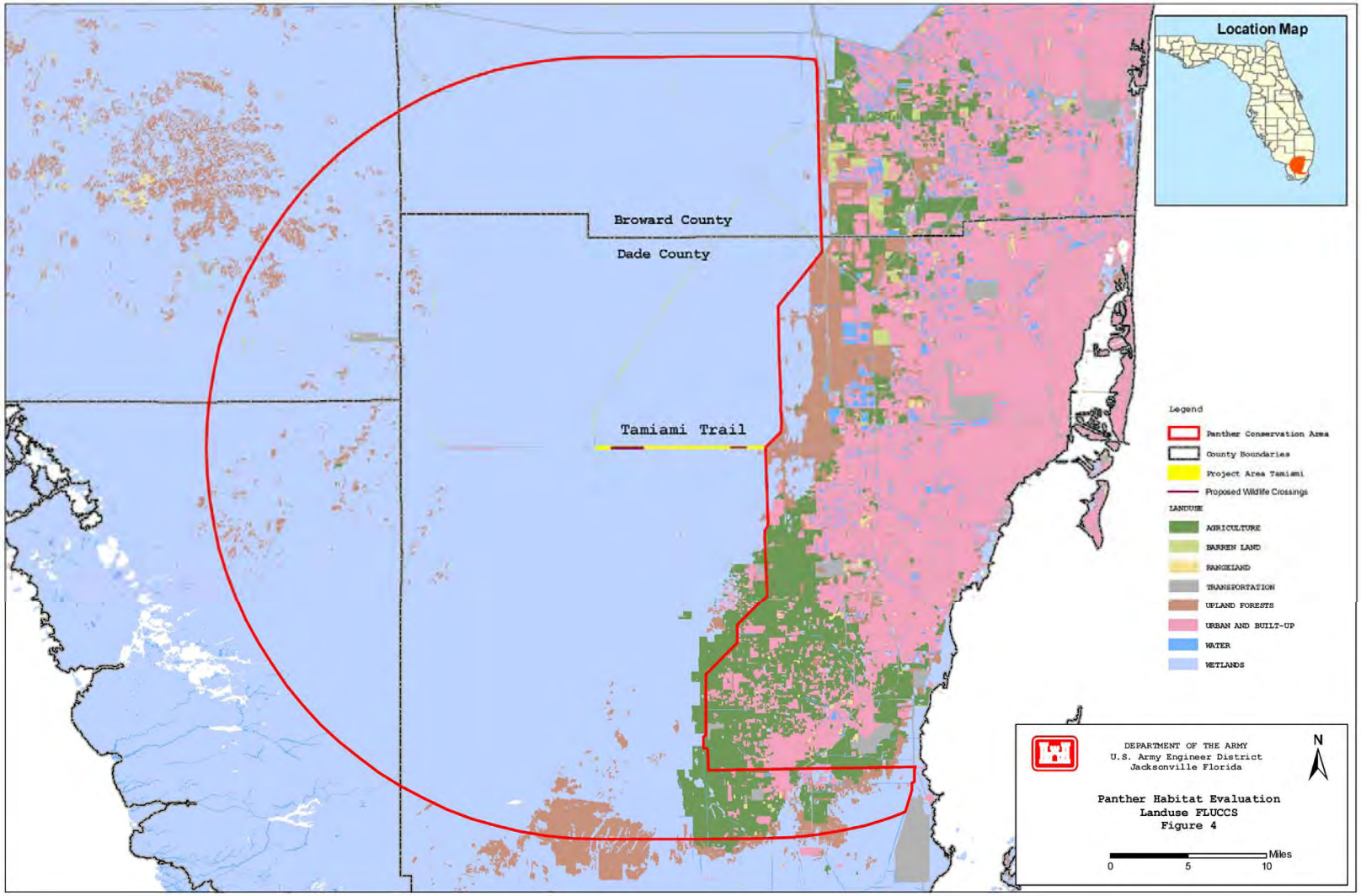

Figure 8. Land use (FLUCCS) map depicting 25-mile action area.

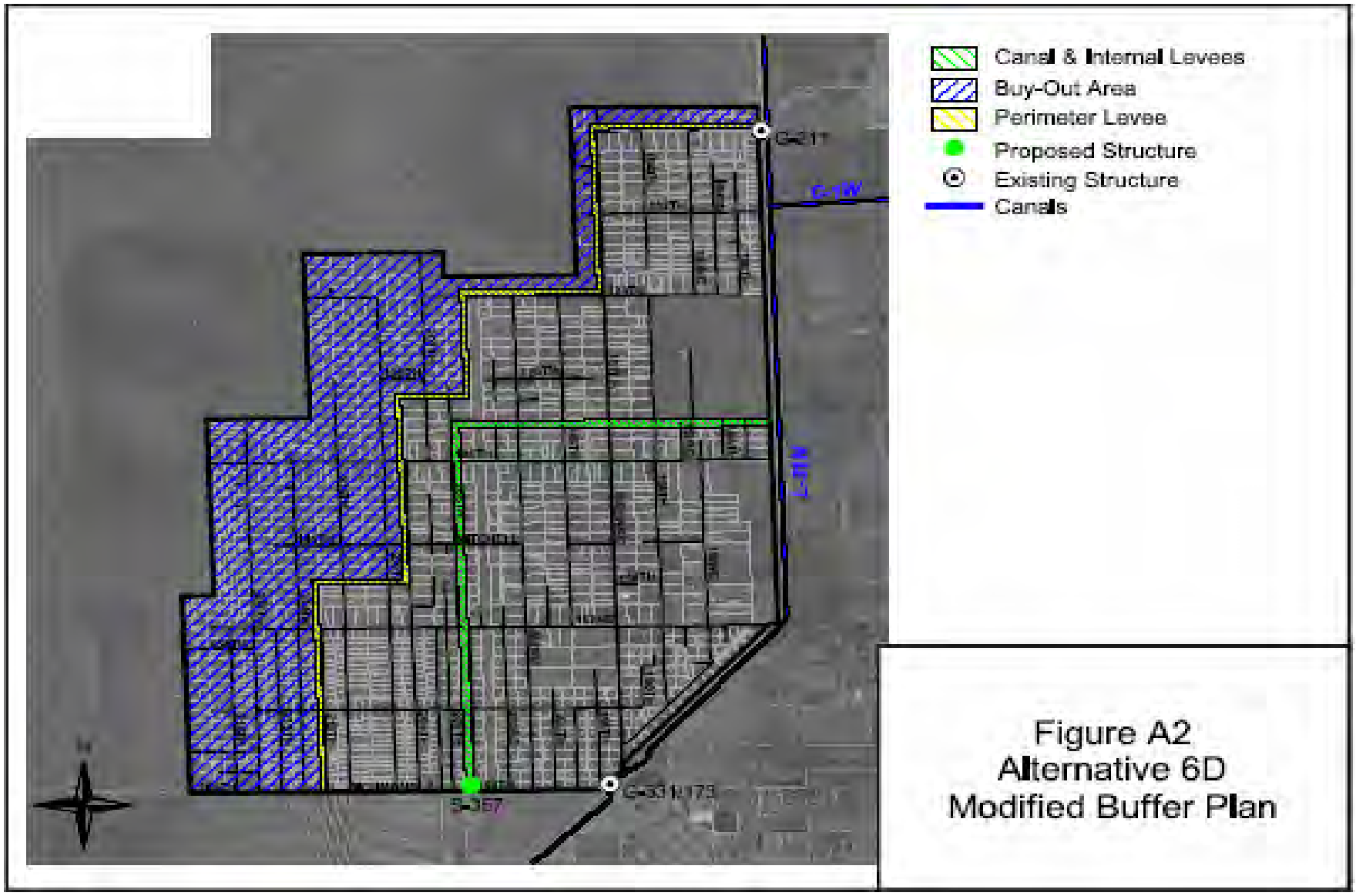

Figure 9. 8.5 SMA alternative 6D showing canal and levee alignments and buy-out area which will all serve as compensation for Tamiami Trail.

Figure 10. Aerial showing 3.5-mile buffer around the compensation area with all panther telemetry.

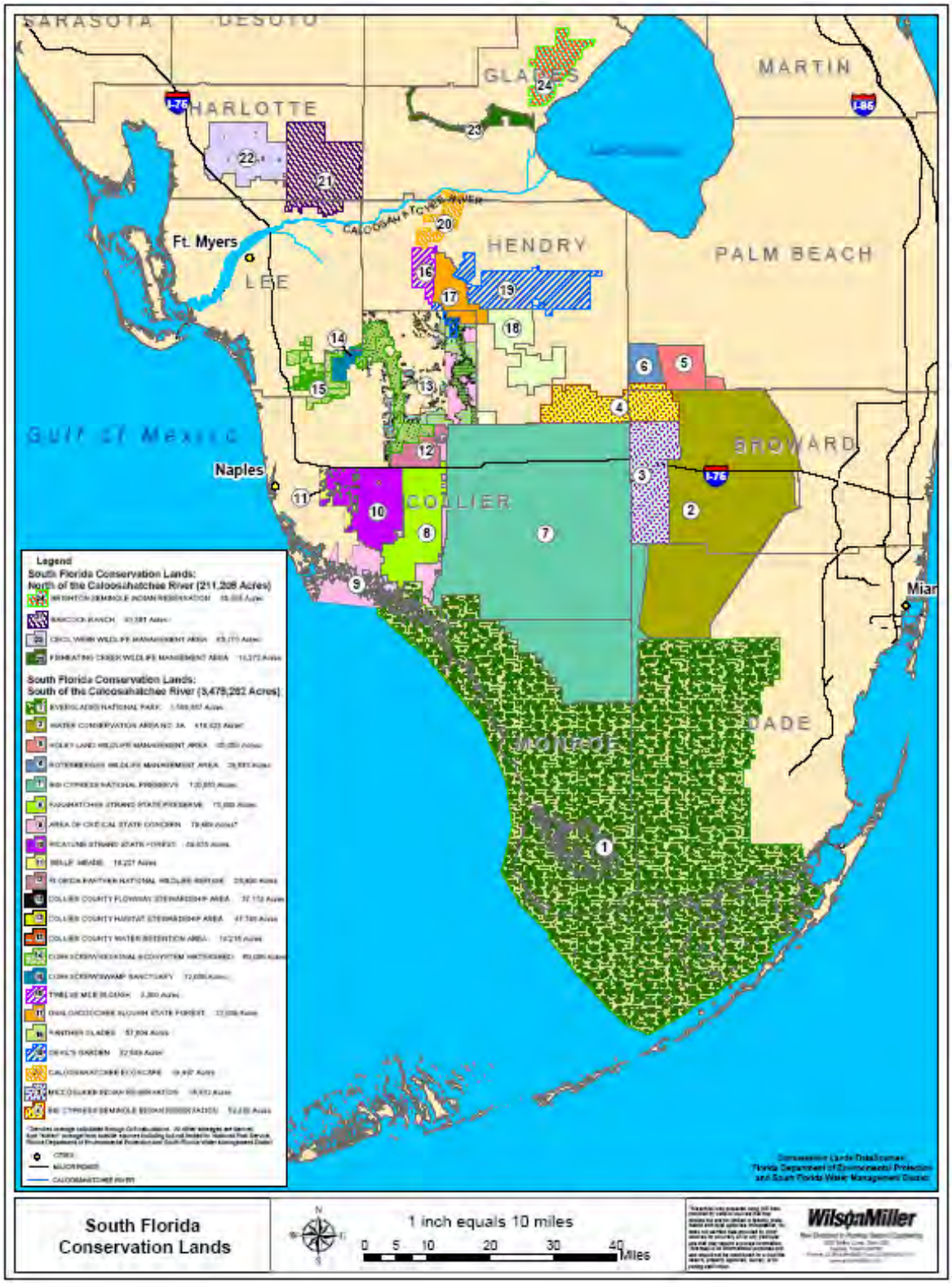

Figure 11. South Florida conservation lands.

Scoping Comments for the Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modifications Modified Water Deliveries to Everglades National Park November 2005

Letters of Comment on the
Final RGRR/SEIS
Tamiami Trail

U.S. Department of the Interior, Office of the Secretary, January 6, 2006

U.S. Environmental Protection Agency, Region 4, January 9, 2006

Florida State Clearinghouse, Florida Department of Environmental Protection, January 9, 2006

Florida Department of Environmental Protection, January 6, 2006

Florida Department of Transportation, January 9, 2006

Florida Department of State, Division of Historical Resources, December 15, 2005

Sierra Club, January 9, 2006

The Everglades Foundation, undated

Florida Power and Light, December 14, 2005

National Parks Conservation Association. January 4, 2006

Miccosukee Tribe (Lehtinen, Vargas & Riedi), January 9, 2006

Sample "form letter" of comment, 1,981 copies received, various dates through January 2006.

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

January 6, 2006

Honorable John Paul Woodley
Assistant Secretary of the Army
U.S. Department of the Army
Office of the Assistant Secretary Civil Works
108 Army Pentagon
Washington, DC 20310-0108

Dear Mr. Secretary:

Thank you for the opportunity to review and provide comments on the *Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement for the Tamiami Trail Modifications, Modified Water Deliveries to Everglades National Park, U.S. Army Corps of Engineers, Jacksonville District, South Atlantic Division, November 2005* (Report). The Report addresses the concerns identified by the Department of the Interior (Department) in our October 11, 2005, comment letter on the draft report. The Department appreciates the Corps' extraordinary effort to address our concerns. The completion of the Modified Water Deliveries to Everglades National Park Project remains as the highest Everglades restoration priority for the Department.

The Department supports the Recommended Plan, Alternative 14, described in the Report. Alternative 14, the Raised Profile with Two-Mile Bridge West and One-Mile Bridge East, achieves in the most cost effective manner the goal of restoring more natural flows of water to Everglades National Park – and thereby habitat within the Park – as set forth in the legislation authorizing the Modified Water Deliveries to Everglades National Park Project. The Recommended Plan will increase flow volumes, connectivity, and distribution of flows and is a crucial step towards restoring historic ridge and slough patterns and historic vegetative communities in Everglades National Park. It will significantly improve fish and wildlife resources in South Florida.

We look forward to working with the Corps toward the expeditious completion of the Modified Water Deliveries to Everglades National Park Project and the achievement of vital benefits for Everglades National Park and the region.

Sincerely,

Terrence C. Salt
Director of Everglades Restoration Initiatives

Cc: Lieutenant General Carl Strock, Commander and Chief of Engineers

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 0 9 2006

District Engineer
Jacksonville District, Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232
Attention: Dr. Jon Molding

SUBJECT: **Tamiami Trail Feature Revised General Reevaluation Report and Second Supplement to the 1992 Final Environmental Impact Statement (GRR/SEIS) on Modified Water Deliveries to Everglade National Park; Central and Southern Florida Project; Dade County, Florida; CEQ No. 20050509; ERP# COE-E 36167-E-FL [dated November, 2005]**

Dear Sir:

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act [NEPA], the U.S. Environmental Protection Agency [EPA], Region 4 has evaluated the long-term environmental consequences of the two-bridge design which will be used to facilitate water movement under the Tamiami Trail [Trail] and then into the Everglades National Park [ENP]. This modification became necessary because water in the L-29 Canal would be at a higher design stage than had previously been estimated. This change in the bridge design will unavoidably raise the costs to lessen potential structural impacts to the Trail. However, its will also have the desired effect of reducing the likelihood of erosion/water penetration and/or low points of the roadway being overtopped. Since the Trail is an important east-west connector in South Florida, especially during hurricane evacuation scenarios, its blockage would be very problematic.

As a result of further review we determined that our original comments were satisfactorily addressed. Our lack of objections to this proposal is a function of its overall societal and environmental benefits and the fact that future projects associated with the Comprehensive Everglades Restoration Plan [CERP] will improve existing upstream water quality problems. Nonetheless, we believe that an adaptive management approach would be beneficial to take maximum advantage of information gained from concurrent/future water quality monitoring and wetland functions' analysis.

EPA appreciated the opportunity to review the document and intends to continue its collaboration with all involved parties on this and future CERP projects. Mr. Eric Hughes [EPA's Jacksonville District Liaison -904-232-2464] and Mr. Ron Miedema

[EPA's South Florida Office - 561 616-8741] will serve as initial points of contact for wetland issues while Dr. Gerald Miller [404 562-9626] can be contacted regarding over all NEPA matters.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

January 9, 2006

Mr. Jon Moulding
Planning Division, Jacksonville District
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Corps of Engineers and South Florida Water Management District – Central and Southern Florida Project – Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modified Water Deliveries to Everglades National Park – Miami-Dade County, Florida.
SAI # FL200512061704C (Reference SAI # FL200508191442C)

Dear Mr. Moulding:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced final RGRR/SEIS.

The Florida Department of Environmental Protection (DEP) continues to support the proposed project and the Recommended Plan – Alternative 14, Two-Mile Bridge West and One-Mile Bridge East. Staff notes that the final RGRR/SEIS document includes significant improvements and addresses many of the state's and DEP's previous comments. Please refer to the enclosed DEP memorandum for additional comments and recommendations.

The Florida Department of Transportation (FDOT) notes that the final RGRR/SEIS reflects the implementation of all the major issues of concern identified in their comments on the draft RGRR/SEIS. FDOT staff will continue to work with the Corps of Engineers on development of a maintainable stormwater pollution abatement system, project design phase discussions, and operational plan effects on the redesigned Tamiami Trail. Please refer to the enclosed letter from the FDOT for further details.

The Florida Department of State (DOS) indicates that staff has reviewed Sections 2.10, 5.6.10, and 7.10, pertaining to Cultural Resources, in the referenced final RGRR, and concurs with the information provided. DOS looks forward to coordinating with the Corps of Engineers in minimizing adverse effects to the Tamiami Trail (8DA6767), due to its potential eligibility for the *National Register of Historic Places*. Please see the enclosed DOS letter for further information.

Based on the information contained in the final RGRR/SEIS and the comments provided by our reviewing agencies, the state has determined that, at this stage, the referenced project is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by the state agencies prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. If you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: Greg Knecht, DEP, MS 3560
John Outland, DEP, MS 45
Tim Gray, DEP, Southeast District
Charlotte Hand, FDOT
Scott Edwards, DOS

Florida
Department of Environmental Protection

"More Protection, Less Process"

Project Information	
Project:	FL200512061704C
Comments Due:	12/30/2005
Letter Due:	01/09/2006
Description:	DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS AND SOUTH FLORIDA WATER MANAGEMENT DISTRICT - CENTRAL AND SOUTHERN FLORIDA PROJECT - FINAL REVISED GENERAL REEVALUATION REPORT/SECOND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (RGRR/SEIS) FOR THE TAMIAMI TRAIL MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK - MIAMI-DADE COUNTY, FLORIDA.
Keywords:	ACOE/SFWMD - TAMIAMI TRAIL MODIFIED WATER DELIVERIES TO EVERGLADES RGRR/SEIS
CFDA #:	99.997
Agency Comments:	
AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES	
No Comments Received	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
No Comment per Mary Ann Poole on 12/23/2005.	
STATE - FLORIDA DEPARTMENT OF STATE	
The DOS has reviewed Sections 2.10, 5.6.10, and 7.10, pertaining to Cultural Resources, in the referenced final RGRR, and concurs with the information provided. Staff looks forward to coordinating with the Corps of Engineers in minimizing adverse effects to the Tamiami Trail (8DA6767), due to its potential eligibility for the National Register of Historic Places.	
TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION	
Comments were transmitted to the Clearinghouse by letter on January 9, 2006.	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
DEP continues to support the proposed project and the Recommended Plan - Alternative 14, Two-Mile Bridge West and One-Mile Bridge East. Staff notes that the final RGRR/SEIS document includes significant improvements and addresses the state's and DEP's previous comments.	
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT	
The SFWMD is a partner with the USACOE in this project. Consequently, a consistency determination is not necessary.	

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

Memorandum

TO: Florida State Clearinghouse

RECEIVED

THROUGH: Greg Knecht

JAN 0 6 2006

FROM: Inger Hansen, Temperince Morgan, and John Outland

OIP / OLGA

DATE: December 29, 2005

SUBJECT: Jacksonville District Corps of Engineers and South Florida Water Management District, Final Revised General Reevaluation Report and Second Supplemental Environmental Impact Statement on Tamiami Trail as part of Modified Water Deliveries to Everglades National Park, Miami-Dade County, Florida

SAI # FL05-1704C (Reference SAI# FL05-1442C)

The Department of Environmental Protection has reviewed the above-referenced Final Revised General Reevaluation Report (RGRR) and Environmental Impact Statement (EIS) and offers the following comments:

Department staff provided extensive comments on this project in our letter dated September 19, 2005. We ask that you refer to these comments with regards to Department position on project issues and related regulatory requirements. The Department continues to fully support efforts to move the Tamiami Trail portion of the Modified Water Deliveries project forward. Alternative 14 consisting of the two-mile bridge on the west and the one-mile bridge on the east end, in addition to raising the un-bridged portions of the existing highway, is the best interim alternative to move forward without prejudging the possibility of a more permanent solution under the Comprehensive Everglades Restoration Plan (CERP). The Tentatively Selected Plan will provide early hydraulic conveyance capacity between the L-29 and Northeast Shark River Slough, enhancing ecological benefits to the ridge and slough systems. We understand that a longer bridge alternative could not be implemented at this time because it would greatly exceed the budget. In addition, completion of Modified Water Deliveries is essential for federal appropriations to construct several CERP restoration projects.

Due to the short duration of the comment period and unavailability of staff over the holidays, the Department has not yet had the opportunity to review the revised report in detail. However, it appears the significant improvements have been made to the document. We note that Appendix L includes responses to comments provided on the draft RGRR/EIS by agencies and stakeholders. It appears that the Corps has attempted to address all of our previous comments by providing clarifications and editorial changes to the text of the report, and has made suggested changes, particularly those related to storm water management concerns, to the final document. We note the following specific comments:

1) Comment 2- Section 5.8-Selection of the Recommended Plan has been expanded greatly and now provides a much more detailed explanation of the basis for selection of Alternative 14.
2) Comment 4- Concur that changes to the document were made, however these changes were in Section 7.4, not Section 5.8.
3) Comment 8- Concur that changes to the document were made, however these changes were in Section 7.65, not Section 7.20.
4) Comment 16- Response to comment indicates that text will be revised; however no changes to this section were noted.
5) Comment 23- Response to comment indicates that Appendix G has been revised; however no changes to this section were noted.

We look forward to working together further with the Corps and the SFWMD to ensure implementation of this important project.

cc: Inger Hansen (email)
Tim Gray (email)
Temperince Morgan (email)
John Outland (email)
Shelley Yaun (email)
Stacey Feken (email)

Florida Department of Transportation

JEB BUSH
GOVERNOR

DENVER J. STUTLER, JR.
SECRETARY

January 9, 2006

Colonel Robert M. Carpenter
U. S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: FDOT Comments on the Central and Southern Florida Project, Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modifications

Dear Colonel Carpenter:

We would like to commend you and your staff for your significant effort to respond to our prior comments dated September 30, 2005 on the Draft Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (EIS) for the Tamiami Trail Modifications. Our comments have been focused on issues related to maintenance, long-term project viability, division of project responsibility, and project costs. The Final document, dated November 2005, reflects the implementation of all our major comments of concern.

The Florida Department of Transportation (FDOT) will continue to work with the Corps towards development of a maintainable stormwater pollution abatement system during the final design stage for the bridges. We will continue to participate in your design phase to ensure development of a practical design which meets FDOT's approval for design variations, drainage design, pavement design, and emergency operations. The FDOT will also continue to work with the Corps on operational plans regarding water elevations, emergency operations, and/or future projects on the redesigned Tamiami Trail.

We also note that we have numerous issues to be worked out through future negotiations including the various real estate authorizations as generally described in your Real Estate Plan Appendix H, geotechnical issues, and utility relocations. We look

forward to the receipt of your Record of Decision for this project.

Sincerely,

Alice Bravo

Alice N. Bravo, P.E.
District Planning and Environmental Management Engineer

cc: Stuart Appelbaum, USACE
Dennis Duke, USACE
Rock Salt, DOI
Denver Stutler, Jr., FDOT
John Martinez, FDOT
State of Florida Clearinghouse

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

December 15, 2005

Ms. Lauren Milligan
Director, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

RE: DHR No. 2005-12491 / Date Received: December 9, 2005
SAI No. FL200508191442C/ Jacksonville District Corps of Engineers
Central and Southern Florida Project - Final Revised General Reevaluation Report/ Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modifications - Modified Water Deliveries to Everglades National Park

Dear Ms. Milligan:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, Chapter 267, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties (archaeological, architectural, and historical) listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We reviewed Sections 2.10, 5.6.10 and 7.10, pertaining to Cultural Resources, in the referenced final revised general reevaluation report, and concur with the information provided. We look forward to coordinating with the Corps in minimizing adverse effects to the Tamiami Trail (8DA6767), due to its potential eligibility for the NRHP.

If you have any questions concerning our comments, please contact Janice Maddox, Historic Sites Specialist, at jmaddox@dos.state.fl.us or 850/245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6436
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
■ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Southeast Regional Office (954) 467-4990 • FAX: 467-4991
☐ Northeast Regional Office (904) 825-5045 • FAX: 825-5044
☐ Central Florida Regional Office (813) 272-3843 • FAX: 272-2340

Stuart J. Appelbaum
Chief, Planning Division
Attn. Jon Moulding
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

January 9, 2006

Re: Final Revised General Reevaluation Reports/Second Supplemental Environmental Impact Statement (RGRR/SEIS) For the Tamiami Trail Modifications

Dear Mr. Appelbaum,

The Sierra Club appreciates the opportunity to comment upon the Final Revised General Reevaluation Reports/Second Supplemental Environmental Impact Statement (RGRR/SEIS) For the Tamiami Trail Modification Project ("Project"). The Sierra Club is dedicated to the exploring, enjoying and protecting wild places on earth; to practicing and promoting responsible uses of the Earth's resources and ecosystems; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives.

In our commitment to promoting stewardship of the natural resources, one of Sierra Club's priority national conservation campaigns is to protect and restore the Everglades. For over two decades the Sierra Club and its Florida Chapter and been actively involved in this essential pursuit. Sierra Club educates citizens through numerous outings into the many habitats of the Everglades to bring a clear understanding of the resources and the challenges involved in restoring this crucial resource. Sierra Club collaborates with many other organizations as a member of the Everglades Coalition working together to educate, promote, and cajole numerous local, state and federal agencies to attain protection and restoration of this World Biosphere Heritage site.

The raising of Tamiami Trail has great importance to Sierra Club and is recognized as a cornerstone of Everglades restoration. The Florida Chapter has a dedicated Website concerning the project (www.build-the-skyway.com) to educate citizens about the project.

It therefore was a great disappointment to see that despite numerous concerns, both scientific and financial that the RGRR/SEIS selected Alternative 14 as the preferred plan. Sierra club would like the record to reflect our serious misgivings about choosing Alternative 14 over Alternative 17. The environmentally preferred plan and the most cost effect plan were not selected based upon short-term cost prohibitions. Moreover, the RGRR/SEIS lacked adequate scientifically based responses to relevant information and questions brought forth by governmental agencies, non-governmental organizations citizens, and academia alike.

The Everglades National Park Protection and Expansion Act of 1989 (PL 101-229), the authorizing legislation for this project, states:

> *Construction of project modifications authorized in this subsection...are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the park in particular and shall not require further economic justification.* (Section 104(a)(3))

Given the above cited reference, it is therefore further unjustified that the Army Corps of Engineers (ACOE) would choose an option that does not consider long-term restoration goals, but rather opts for a plan that often provides less than half of the environmental benefits and objectives that Alt. 17 would provide (see appendix E "Tamiami Trail Modifications Benefits Analysis Procedures"). Worst yet, conclusions were based upon a financial objection to the "skyway" cost, but does not take into account future actions and costs associated with retrofitting Tamiami trail to accommodate for the Comprehensive Everglades Restoration Project (CERP) that taxpayers will have to bear.

Furthermore, in response to the numerous governmental and public comments centered upon the shortcomings of the Alt. 14 2-1 split appeared flippant, and often conflicting in response.

For example, the Florida Fish and Wildlife Conservation Commission comment letter (page 3, September 19, 2005) refers to Alt. 14 as "an interim alternative to implement prior to the approval of a more permanent solution under the Comprehensive Everglades Restoration Project." Yet, the ACOE refused to acknowledge numerous comments based upon these concerns that that Alt 14 will implemented only to be inadequate to meet future restoration goals criteria (for example see Appendix L Public Involvement, FL Dept of Transportation issues that need to be addressed- 4.a. "The consistency of this project design with future restoration objectives and projects.").

Another example of inadequate response to agency concerns please refer to Appendix L Public Involvement: Department of Interior - Pg. 9.56 regarding the compatibility with future planning with CERP Decompartmentalization Project (Decomp) currently planned Phase 1 projects: "*...Mod waters TT does not depend on Decomp; it is the other way around.*" Further on page 4, the FEIS response further stated that

> "*... regrets cannot accommodate DOI concerns and needs due to schedule requirements.*" and "*... this level of detail is not appropriate for a feasibility-level study*"

Responses such as these simply do not even attempt to ameliorate the tax payer's burden of assuming retro fitting TT to accommodate Decomp. authorizations. And is this not the appropriate time to explore and address relevant concerns before the Record of Decision?

As the FEIS acknowledges: "Individuals with resource and regulatory agencies, environmental advocacy organizations and the public have expressed a strong preference for providing an elevated highway that would provide additional environmental benefits." FEIS, vol. 1, p. ES-v. The FEIS further acknowledges that this choice among competing alternatives is a "controversial" and "unresolved" issue. Id. Especially given the level of controversy surrounding this issue, the Corps has an obligation, under NEPA, to provide a more comprehensive discussion regarding the feasibility of the Skyway alternative. The FEIS fails to fulfill that obligation. The Corps should prepare a new Draft EIS that vigorously explores the feasibility and environmental advantages of the Skyway alternative and re-circulate that new DEIS for public and agency review and comment.

Additionally, EPA- Pg 1 1. Inadequate response to the inquiries of Tamiami Trail's integrity in given future high water, forecasted hurricane episodes and evacuation needs, and possible overtopping of the roadbed. Not included in the RGRR/FEIS is the quite possible removal of fill that will be required to make the trail safe for increased flow under Mod waters; nor increased cost of DOT to maintain TT due to poor planning and engineering and result impacts to Everglades resources (See Appendix L for DOI/ENP potential impacts and ACOE responses).

The Corps apparently recognizes that the discussion of cumulative impacts in the DEIS is woefully deficient. See, eg, FEIS, vol. 2, p. 106 (response to Sierra Club comments acknowledging that DEIS failed to identify and discuss past, present and future related actions).

Unfortunately, the FEIS continues to fail to satisfy NEPA for the same reason. While the Corps has added a list that contains "some example" of related actions, the FEIS fails to discuss the environmental effects of those related actions in combination with the proposed action and action alternatives. Moreover, the FEIS fails to discuss the related actions that Sierra Club identified in its comments on the DEIS. This omission renders the FEIS inadequate as a matter of law. The Corps must prepare a new DEIS that includes a comprehensive list of related actions and that discusses the cumulative environmental effects of those actions in combination with the project, and the agency must re-circulate that draft for public and agency review.

In summary, it will be more difficult and more expensive in the long run to later construct a needed single bridge once the two separate bridges are in place, and should funds be available for this modification under additional funding sources. TTM should not be disassociated with CERP as taxpayers will have to shoulder the burden of additional cost that could have been ameliorated under TTM.

- The FEIS misleads the public by distorting the facts, such as cost benefits, wetland loss/gains, and net associations.
- The FEIS fails to adequately address a particular impact (glosses over an issue, includes only conclusion statements unsupported by scientific evidence, fails to

provide studies or quantitative data to support assertions, fails to address competing expert evidence, etc.)

- FEIS ignores projects that could have cumulative impacts when considered in combination with the Tamiami project.
- FEIS fails to adequately address an alternative that would reduce significant environmental effects.
- FEIS ignores best buy figures.

Statements such as in response to an DOI inquiry *pg 11, #83 DOI- "...details that are not available a this time..."* are simply not acceptable on such a crucial project. Yet we are supposed to assume that everything created in future plans will be in the best interest of restoration, and thus will be able to answer these present concerns adequately.

Sierra Club will look forward to the realization of Everglades restoration through projects such as TTM and the "skyway" as a way to put forth the very best science to serve citizenry and our natural resources in the optimal capacity.

Kim Anaston-Karas
Co-chair, Everglades Committee
Florida Chapter, Sierra Club

1/17/2006

Comments on Final RGRR/SEIS for the Tamiami Trail Modifications, November 2005 (Modified Water Deliveries to Everglades National Park)

It is disappointing to find that this EIS process has not resulted in the selection of an alternative that would not only best meet the stated project's objective, but also one that is cost effective. As clearly noted by various resource agencies within the Department of Interior and voiced by the numerous public comment letters submitted in response to the draft revised RGRR/SEIS (Appendix L), Alternative 17, the 10.7 mile bridge, represents the "environmentally preferred plan" that best meets the four objectives of restoring the wetland functions of Northeast Shark River Slough. The Everglades National Park Protection and Expansion Act of 1989 (PL 101-229), the authorizing legislation for this project, states:

> *Construction of project modifications authorized in this subsection...are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the park in particular and shall not require further economic justification.* (Section 104(a)(3))

The environmental benefits for Alternative 17 are described in supporting documents from the U.S. Fish and Wildlife Service and Everglades National Park (Appendix F) and the EIS document itself also stated that this alternative provides the "greatest potential" for restoration of ridge and slough habitat within Everglades National Park. However, the EIS concludes that the longer bridge alternative could not be recommended because its costs would greatly exceed the project budget, even though this alternative was demonstrated to be cost effective relative to habitat units provided (Table 25).

It should also be noted, for the record, that even though the EIS indicates that Alternative 17, the 10.7 mile bridge, was not selected because of cost, the EIS presents misleading calculations of environmental benefits and impacts of this alternative relative to the other evaluated alternatives. For example, in Table 7, Impacts to Wetlands, the area under the proposed bridges is described as a wetland loss, in part due to shading by proposed bridges. However, open-water habitat is classified as wetland habitat under the National Wetland Inventory system and thus is not actually a loss, but rather a conversion of habitat. Additionally, the document presents another type of method for calculating wetland impacts in Section 7.6.5 (FLUCCS analysis), but this calculation is used only for the preferred alternative, which results in a wetland gain rather that a previously calculated net loss of wetland habitat. This analysis should have been used comparatively for all of the alternatives. However, more importantly, a wetland functional analysis should have been performed for the alternatives evaluated.

Given that the recommended plan selected presents an alternative that consists of two bridges as well as raising the crown elevation of the road from an *average* elevation of 11 feet to 12.3 feet, there is a concern that this alternative will create additional problems that were not addressed in the EIS. First, as noted by comments submitted to the draft document by the National Parks Conservation Association (letter dated October 11, 2005), the construction of these structures may preclude future modifications that may be proposed for the CERP Decompartmentalization Project. It will be more difficult and more expensive in the long run to construct a single bridge once the two separate bridges

are in place should funds be available for this modification under additional funding authorizations.

Additionally, the raising of the road is likely to result in an increase in road mortality not documented in the EIS. The Tamiami Trail has been described as an "avenue(s) of destruction for snakes" and represents a significant barrier to mass reptile and amphibian migration (as described by Tennant in *A Field Guide to Snakes of Florida*, 1997). By increasing the road elevation, wildlife will require longer crossing time thereby increasing the exposure time to road traffic and subsequent injury or mortality. This environmental impact has not been evaluated in the current EIS.

Recommendation: The Corps, *at minimum*, should consider an alternative that incorporates a single 4-mile bridge, as described within the *Draft Tamiami Trail Alternative Optimization Report*, prepared by Everglades National Park (Appendix F). This alternative appears to result in restoring similar historic flow volumes to Northeast Shark River Slough as the 10.7 mile bridge alternative. However, a four mile bridge will only provide 37% of the potential connectivity between Water Conservation Area 3B and Northeast Shark River Slough (ENP Report, p. vii). Therefore, the Corps and DOI should work as expeditiously as possible to secure funds that will allow the construction of an elevated roadway across the entire 10.7 mile portion of the Tamiami Trail between S-334 and S-333.

Thank you for this opportunity to comment.

Sincerely,

Dr. Betty J. Grizzle
Wetland Scientist
The Everglades Foundation
18001 Old Cutler Road, Suite 625
Palmetto Bay, FL 33157
305-251-0304
bgrizzle@evergladesfoundation.org

FPL Comments on Tamiami Trail Final

From: Florette_Braun@fpl.com
Sent: Wednesday, December 14, 2005 1:19 PM
To: TTMComments SAJ
Subject: Comments on Tamiami Trail Project Plans

Dear Mr. Moulding: FPL would like to reiterate our earlier comments noting that we have a distribution line running along the length of Tamiami Trail within your proposed project. This critical line serves the Indian Reservation. The line will need to be relocated and/or modified to accommodate the Tamiami Trail project, but it can not be taken out of service for any length of time. An alternate location will need to be provided for this line and the new facility will need to be constructed and in service before the existing line can be removed. If the new line is to be designed into the new bridge you will need to accommodate attachments and built-in manholes into the proposed bridges.

In order to minimize impacts to both the government and FPL it will be important to involve FPL in early review of plans for the bridges and elevated roadways. In this manner creative opportunities and solutions can be identified and costly impacts recognized and minimized.

Florida Power and Light will need at least one year's notice before the start of the project in order to provide time for cost estimation, budgeting, planning and relocation work. A contract agreement will also be needed to perform the distribution work.

In addition, this proposed work appears to cross a currently open FPL transmission line right-of-way where future facilities are to be located. Should the proposed project impact this right-of-way an agreement will need to be reached with FPL to address additional engineering and construction costs that may be incurred to accommodate bridges or elevated roadways within the right-of-way.

If you have any questions about our comments please let us know.

Thank you

Florette Braun
Environmental Services
561-691-7059

NATIONAL PARKS CONSERVATION ASSOCIATION®

Protecting Parks for Future Generations SM

4 January 2006

Stuart J. Appelbaum
Chief, Planning Division
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

VIA EMAIL and post

Dear Mr. Appelbaum:

On behalf of National Parks Conservation Association (NPCA), I again urge the US Army Corps of Engineers (Corps) to select Alternative 17, the 10.7-mile, elevated "Skyway," as the best and viable alternative to restore water flow and ecological connection through America's Everglades into Everglades National Park and Florida Bay. NPCA is disappointed that the Corps's Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modification of MWD continues to recommend an alternative that does not deliver significant environmental benefits for Everglades National Park, and could preclude the construction of the Skyway in the future with other authorizations or appropriations.

We appreciate the Corps's attempts to address a number of issues NPCA raised in our previous comments, dated October 11, 2005. We understand the fiscal constraints presented by the Corps and the Department of Interior, however, we remain unconvinced of the benefits that the Corps's preferred plan provide for Everglades National Park and the greater Everglades ecosystem. Other alternatives are less costly and build a single span bridge, which would be more compatible with a possible future Skyway.

Without completely unimpeded flow, life-giving water will continue to flood the conservation areas and not travel naturally through Everglades National Park out to Florida Bay. Only a Skyway will truly reestablish unrestricted, free flowing water to the park, a critical component to a fully restored Everglades, on which South Florida's wildlife and its six million residents rely for drinking water, recreation, and other uses.

Sincerely,

John Adornato, III
Everglades Restoration Program Manager

NATIONAL PARKS CONSERVATION ASSOCIATION ®

National Office:
1300 19th Street, NW, Suite 300, Washington, DC 20036
Office: 202-223-NPCA (6722) Fax: 202-659-0650

Sun Coast Regional Office:
3475 Sheridan Street, Suite 307, Hollywood, FL 33021
Office: 954-961-1280 Fax: 954-985-8047

cc: Dan Kimball, Superintendent, Everglades National Park
Rock Salt, Everglades Restoration Initiative, Department of Interior
Carol Wehle, Executive Director, South Florida Water Management District

LEHTINEN VARGAS & RIEDI
ATTORNEYS AT LAW
A PROFESSIONAL ASSOCIATION

January 9, 2006

Colonel Robert Carpenter
District Commander
Jacksonville District
Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, Florida 32207

Via Fax, E-mail, and Regular Mail

Re: Miccosukee Tribe's Comments on the Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (Final RGRR/SEIS) for the Tamiami Trail Modifications

Dear Colonel Carpenter,

The Miccosukee Tribe of Indians of Florida hereby provides comments on the U.S. Army Corps of Engineers ("Corps") Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement ("Final RGRR/SEIS") for the Tamiami Trail Modifications dated August 2005. The Tribe incorporates by reference its comments on the Draft GRR/EIS previously submitted on October 11, 2005; the Tribe's comments on the Final GRR/EIS on Tamiami Trail dated 2003; the Tribe's comments on the Draft GRR/SEIS dated February 4, 2002; and the comments made at all public meetings.

The Miccosukee Tribe ("Tribe") contends that the two bridge Recommended Plan (Alternative 14) is unnecessary, expensive, and will continue to delay the restoration of the dying Everglades. The Tribe further contends that the Recommended Plan is contrary to the Water Resources Development Act of 2000 ("WRDA 2000"), and that the Corps has no authority to construct it under the Modified Water Deliveries Project ("MWD"). The Corps' selection of this bridging option is a thinly veiled attempt to build the Comprehensive Everglades Restoration Plan ("CERP") decompartmentalization component, which Congress directed could not be constructed until MWD was implemented. It will also continue to delay the implementation of both MWD and the Combined Structural and Operational Plan ("CSOP").

The Corps is well aware that when Congress passed WRDA 2000, it specifically required completion of the MWD Project prior to authorization of the CERP Decompartmentalization

7700 N. KENDALL DRIVE, SUITE 303 MIAMI, FLORIDA 33156 TELEPHONE (305) 279-1166 FAX (305) 279-1365

Project. WRDA 2000 mandates: "No appropriation shall be made to construct the Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement Project (including...Raise and Bridge East Portion of Tamiami Trail...) until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades National Park Protection Act of 1989 (16 U.S.C. 410 r-8)." Congress clearly prohibited exactly what the Park and Corps are now attempting to do. Building Tamiami Trail bridges as part of MWD will not stand up to a legal challenge.

The Tribe is disappointed that the Final RGRR/SEIS continues to fail to analyze the reasonable alternative of clearing, enlarging, and if necessary, constructing some additional culverts to allow the maximum projected flow of MWD of 4,000 cubic feet per second (cfs) through Tamiami Trail. Instead, the $159 million dollar Recommended Plan selected is nearly twice the amount initially authorized by Congress for the entire MWD Project ($81 million dollars). Under the 1989 Act which authorized MWD, the Secretary of the Army was only authorized to restore natural hydrologic conditions to the extent practicable. Therefore, even if delivering the projected 4,000 cfs is not practicable due to the constraints of the existing roadbed, the Secretary will have met his obligation by restoring the amount of water that is "practicable." Thus, spending almost double the cost of the initially authorized cost of the entire project for a minor component is clearly not "practicable," especially when Appendix D, Annex A shows that the current culvert system has the hydraulic capacity to pass the 4,000 cfs maximum projected flow. (Appendix D, Annex A at ¶ 3 and Table 2.) Perhaps that is the reason that the Corps fails to emphasize the 4,000 cfs contained in the Final GRR/SEIS dated December 2003 in the 2005 Final RGRR/SEIS.

Appendices D and E show that a bait and switch has been used to attempt to fool Congress into believing this expensive white elephant is necessary under MWD. Although the projected MWD maximum flow is 4,000 cfs, the advisory group utilized by the Corps improperly used NSM 4.6.2 modeling which provides a volume of water greater than CERP to model alternatives and justify the bridge (i.e. 1372 acre feet of water is far more than the 921 acre feet of water authorized for CERP D13R in the Yellow Book adopted by Congress.) (Section 3.2 and Appendix D, Annex A, Table 3; *See*, Table 3 attached as Tribe's Exhibit A.) Clearly, the two bridge Recommended Plan is not necessary to pass MWD predicted flows, and Congress and the public are being asked to provide a huge sum of money to build an unnecessary two bridge alternative that could prejudge the ultimate CERP solution for Tamiami Trail. It will also delay the implementation of MWD causing continued destruction of the priceless Everglades.

The Tribe contends that the Hydrology and Hydraulics Report (Annex A) also shows that the inexpensive alternative of cleaning the existing culverts, and adding a few more where necessary, would allow MWD to move forward expeditiously so that we can move forward toward CERP. The Final RGRR/FEIS admits that the culverts under Tamiami Trail have the capacity to convey the MWD required volume of water of 4,000 cfs. Id. at ¶ 3 and Table 2). The Corps also admits in response to the Tribe's comments that the Hydrology and Hydraulics Report "demonstrates that the current culverts do have the capacity to move large volumes of water." (Appendix L, Page 37 at Comment 25.) Yet, rather than choose the simple and inexpensive culvert alternative, the Park has manipulated the Corps into selecting a Recommended Plan that wastes

taxpayer money and violates the prohibition against constructing CERP Decompartmentalization before MWD is completed. Clearly, both the Park and the advisory group utilized by the Corps, have ignored the directive of Congress that MWD must be implemented before it will allow the bridging of the Trail to move forward. It is improper to spend money to raise the Trail under MWD when Congress has not authorized it.

The Tribe provided the Corps with its Ten Tamiami Trail Tenets in its October 11, 2005 comments on the Draft RGRR/SEIS. (See, Exhibit B.) Only after these Tenets have been met and the blockages have been cleared from the culverts and structures, will the Tribe ever support the bridging of Tamiami Trail. The modeling chicanery used in the Final RGRR/SEIS shows that the Park, not happy with MWD design volumes, has succeeded in getting the Corps to use a model that uses far more acre feet of water than Congress has even authorized for CERP to select the Tamiami Trail alternative. (See, Section 3.21 and Appendix D, Annex A, Table 3.) The result is that the taxpayer will waste money on an unnecessary bridge for a Pre-CERP project the cost of which has all ready escalated more than 300%. This cost is certain to escalate more, since Appendix I-12 shows that the disposal site for the road materials south of the 8.5 SMA is not permanent, yet the huge cost of moving these disposal materials a second time is not included in the cost.

The Tribe is also disturbed that the Corps continues to refuse to calculate the costs, both economic and environmental, that have occurred to the Everglades as a result of the delay of the MWD. The lengthy, unwieldy title of this document is indicative of the delay that has been caused by DOI's continued attempts to implement the $8.4 billion dollar CERP through this originally estimated $81 million dollar Pre-CERP MWD Project. The expeditious implementation of this long delayed restoration project is vital to the Tribal Everglades, which supports the culture and way of life of the Miccosukee Tribe. Despite this, the Corps allowed an ad hoc advisory group to meet in secret and remove performance measures that had been derived in previous public meetings that would have looked at impacts and benefits to the Tribe's lands in WCA 3A. (See, 5.21-5.23 and Appendix E at page 3.)

The Tribe's goal throughout the long Tamiami Trail process has always been to help the Corps select a plan for MWD that is economical and within its statutory authority under PL 101-229, so that this important project would be implemented expeditiously. The Final RGRR/SEIS correctly states that MWD is a prerequisite to WCA 3A Decompartmentalization under CERP and that any delay in the project will delay CERP. The two bridge Recommended Plan is guaranteed to cause continued delay. In 1992, when the Corps presented the MWD GDM/EIS to Congress, it claimed that the $81 million dollar project would be completed by 1997. In 1994, the Project Cooperation Agreement ("PCA") was signed to construct a project that had already escalated from an $81 million to a $141 million dollars. Completion dates for the project included December 31, 2001; December 31, 2003; and December 31, 2006. None of the dates were met. The MWD Project cost has now escalated to at least $400 million dollars and its new completion date is 2010. Selection of the unauthorized two bridge Recommended Plan, which has not been authorized or approved by Congress and may never be, will guarantee this project important to the Tribe and the Everglades, will remain mired in morass.

II. SPECIFIC COMMENTS ON THE FINAL RGRR/SEIS

A. A TALE OF TWO BRIDGES: USING MODELING CHICANERY TO EXCEED AUTHORITY

"Get your facts first, then you can distort them as you please." - Mark Twain

PL 101-229 is the legislation that authorized the MWD Project. Tamiami Trail improvements were only a minor component of MWD, since as the Final RGRR/SEIS states at page ES-I, "it was believed that the existing culverts under the roadway would be adequate to convey the flow of water." The story of how a minor component became a major $159 million dollar Recommended Plan costing 2 times the entire cost of the originally authorized MWD Projects smacks of politics and chicanery. The Federal objective for the MWD Project, apparently long forgotten by the Corps, was to restore natural conditions to the extent practicable, which in the 2003 GRR/SEIS was a projected (maximum) MWD flow of 4,000 cfs through Tamiami Trail. (See, Corps'2003 GRR/SEIS and the Hydrologic and Hydraulics Report in the FEIS/RGRR/SEIS at Appendix D, Annex A, page 3, ¶ 2 which explains that the 4,000 cfs is based on the discharge capacity of certain structures.) Despite the fact that PL 101-229 only directed the Secretary of the Army to restore flows "to the extent practicable," and the prohibition of WRDA 2000 that there would be no bridging of Tamiami Trail before MWD was implemented, DOI conspired to get a bridge based on modeling impacts with greater volumes of water than even CERP allows.

The Hydrologic and Hydraulics Report contained in the Final RGRR/SEIS at Annex A contains many facts not contained or explained in the Final RGRR/SEIS itself. Annex A also admits that the "current system has the hydraulic capacity to convey the required volume of water." Id. at page 2, ¶ 3 and Table 2). Apparently, to get by the fact that the current system could handle projected MWD flows as the initial 1992 GDM had predicted, those who wanted more water improperly used a model that provided volumes of water far greater than Congress approved even for CERP to justify bridging Tamiami Trail under MWD. Buried in a separate volume in Appendix D, Annex A, technical information not contained in Volume 1 shows that NSM Model Version 4.62, which provides 1372 acre feet of water greater than the 921 acre feet of water authorized under CERP, was used to assess impacts of alternatives on Tamiami Trail. (Appendix D, Annex A, page 4, ¶ 6 and Table 3; Section 3.21.) While the Hydrology and Hydraulics Report says this model run was chosen because it represents stage and duration target for the Greater Everglades System, it should be remembered that MWD was never intended to produce CERP volumes of water, let alone those that exceed CERP. Id. at Page 4, ¶ 6.

The inappropriate use of an NSM model that produces volumes of water greater than CERP by the ad hoc advisory group to model water levels in WCA 3B and the L-29 canal and to determine impacts to Tamiami Trail has resulted in the selection of an over-designed Recommended Plan that will cost at least $159 million dollars. This is almost twice the amount of the funds of $81 million dollars authorized for the entire MWD Project. While the Tribe recognizes that the technical solution for the Tamiami Trail component needs to be compatible with the expected hydraulic conveyance of CERP, the 4,000 cfs projected (maximum) MWD flow

should be the federal objective. It is improper to over-design a project, and exceed project authorization, based on the future CERP which may never be authorized or built. While the Corps is quick to use Department of Transportation ("DOT") safety concerns as an excuse for reiniating the Tamiami Trail process and choosing such an expensive fix, a review of Appendix D, Annex B shows that DOT was kept in the dark about the modeling assumptions used for many years. A March 22, 2004 letter from DOT to the Corps in Annex B shows that it had requested information on hydrologic modeling assumptions used by the Corps as early as September 29, 2000, but that this modeling information had not even been provided as late as March 5, 2004. Thus, it appears that the only modeling assumptions ever provided to DOT, if they ever were, used NSM 4.6.2 modeling assumptions with water volumes far in excess of what MWD would provide.

The Tribe contends that the Corps has exceeded its MWD authority by using NSM 4.6.2 to over-design Tamiami Trail modifications, and that it currently has no authority without Congressional authorization to build this Tamiami Trail Project. Annex A claims that using the NSM created a more "prudent" design because it would be compatible with future restoration projects that are part of CERP," but the Tribe contends that the culvert analysis in Table 2 shows that the current system has the hydraulic capacity to convey the required quantity of water for the MWD Project and also provides a hydraulic connection to the sloughs. Id. at Page 6 at ¶ 8 and Page 11 at ¶ 17. The Corps has no authority to design Tamiami Trail for CERP under the MWD Project. Use of the west bookend model as a boundary condition because it was the most environmentally aggressive plan that put the largest amount of water in NESRS was also not in the Corps authority for MWD. Id. at page 9, ¶ 14(e); Appendix E; and Appendix L at Comment 43. In fact, the west bookend has been soundly criticized and rejected in the CSOP Advisory Team Process as not being within MWD project authority. It is unclear why the Corps would allow this unrestrained DOI model, which would create vast flooding in urban and agricultural areas, to be used for a project that is only supposed to restore more natural hydrological conditions "to the extent practicable."

B. AN AD HOC ADVISORY TEAM, WHICH FAILED TO COMPLY WITH FACA, MADE RECOMMENDATIONS ON PLAN & BRIDGE PLACEMENT

Contrary to the Federal Advisory Committee Act ("FACA"), the Corps assembled a team of non-federal entities and consultants who developed performance measures and screened alternatives at two secret, non-public meetings on May 23-26 and July 6-7, 2005. (Section 5.21.) This advisory group adopted the faulty Park analysis and allegedly prepared the MWD Tamiami Trail Modification Benefits Analyses Procedures dated August 2005 attached as Appendix E to the Final RGRR/SEIS. While the Corps attempts to paint this advisory group as a fact finding team, it is clear that it made policy recommendations and that the Corps improperly delegated their statutory authority to them. This advisory group not only deleted performance measures from the prior EIS process that had been devised in public meetings, it also created new ones, and revised and changed objectives of the project itself. Id. at page 3. Moreover, contrary to the National Environmental Policy Act ("NEPA"), the group failed to analyze all reasonable alternatives for Tamiami Trail. Thus, the Final RGRR/SEIS fails to analyze the viable culvert alternative. Instead, the document analyzes and rubber stamps new alternatives that were screened and developed by an ad hoc advisory team that met in a non-public process. This group was an advisory group that

screened and recommended alternatives to the Corps but was not constituted under the Federal Advisory Committee Act "FACA".

The advisory group also selected bridge locations. The western bridge is to be sited between the Blue Chanty Canal and one-half mile east of the Osceola camp. The eastern bridge is to be sited approximately one mile west of the S-334 and will extend to the west for approximately one mile. The Tribe contends that from a hydrologic, hydraulic, and environmental point of view, that the best way to distribute flows across Tamiami Trail is by clearing out and utilizing the existing culvert system. Depending on the ultimate flows to be passed, it may be necessary to increase the size and/or number of culverts, but passing the water on a broad front that mimics historic flow patterns and distribution must be better than concentrating flows at one point as the bridge will. Should the Recommended Plan ever be authorized by Congress, the Tribe contends the bridges should be positioned to be effective and non-obtrusive. The current proposed location does not meet these goals. The heart of Shark River Slough is several miles to the east of the proposed location, roughly in the middle of the 6.5-foot contours, which is readily apparent from topographic maps or satellite images. It would be logical and prudent to place the longer bridge in the east, so that it passes larger quantities of waters along historic flow lines. The current proposed location for the western bridge could force water to flow to the southeast, in an unnatural way, until it intersects the historic flow path and turns back to the southwest.

In addition, the proposed location for the Recommended Plan forces the water to circumvent a good portion of NE Shark River Slough, thus losing restoration benefits and wasting the tens of millions of dollars spent to forcibly buy out many residences in the 8.5 Square Mile Area allegedly to permit the raising of water in this area. Placing the larger bridge to the east would also help abate any impacts to the Tiger Tail and Osceola Indian Camps, which is a Tribe priority. The Final RGRR/SEIS fails to conduct a modeling analysis of how the Recommended Plan would impact the Miccosukee Reserve Area (MRA). With the entire L-67 Extension removed, and most of the water being released much closer to the MRA, one can logically expect that water levels around and/or in the MRA will increase, thus potentially creating flooding problems for the Tribe. This was not analyzed in the Final RGRR/SEIS.

C. FINAL RGRR/SEIS FAILS TO COMPLY WITH NEPA

1. Final RGRR/SEIS Improperly Segments the Modified Water Deliveries Project

Contrary to the conclusion in Section 1.4, the Tribe contends the Final RGRR/SEIS fails to comply with the National Environmental Policy Act ("NEPA"). The Tribe contends that the Corps has improperly segmented the MWD Project into separate components, such as the 8.5 Square Mile Area, Tamiami Trail, and Seepage Control components, contrary to the National Environmental Policy Act (NEPA). The 1992 General Design Memorandum ("GDM") and EIS for the MWD Project detailed the condition of the environmental and resources within a much larger study area than is currently being analyzed in the Final RGRR/SEIS. Tribal lands in WCA 3A, a 915 square mile area, were included in the impacted area in the 1992 GDM but are excluded from the analysis in the Final GRR/SEIS. NEPA clearly provides that connected projects should be evaluated in a single Environmental Impact Statement (EIS). (40 C.F.R. § 1502.4). The

Council on Environmental Quality (CEQ) regulations governing NEPA state that, *proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.* When the Corps prepared its GDM for the MWD Project in 1992, it evaluated all aspects of this interrelated project in a single EIS. This improper segmentation has caused the Final RGRR/SEIS to fail to adequately assess impacts on Tribal lands and resources. Finally, contrary to NEPA, the Corps did not respond to the Tribe's comments on this improper segmentation in the Final RGRR/SEIS.

2. The Final RGRR/SEIS Improperly Narrows the Purpose, Scope and Study Area

The narrow purpose and scope in Section 1.3 of the Final RGRR/SEIS allows the impacts of delay, especially those to the Tribal lands in WCA-3A, to remain unassessed and skews the analysis of the alternatives. It should be noted that Section 104(3)(d) of PL. 101-229, which directed the Corps to construct the Modified Water Deliveries Project, says that the *project modifications are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the Park in particular.* The purpose and scope should be that of the MWD that is contained in the 1992 GDM, which included the Water Conservation Areas, Northeast Shark River Slough and the Shark River Slough Basin of Everglades National Park (ENP). The 1992 GDM stated that: *when fully operational the MWD project will benefit the ecosystem function and habitat value of approximately 100,000 acres of wetlands in NESRS, 600,000 acres of wetlands in WCA-3A and 200,000 acres of wetlands within the Shark River Slough basin of ENP.* Thus, the described benefits in the Final RGRR/SEIS should include these areas that comprise 900,000 acres of Everglades wetlands.

Due to the failure of the Corps to broaden the study area, and consider the serious environmental harm being caused by the failure to complete MWD, the Final RGRR/SEIS omits issues of vital importance, such as the impact of the project and project delays on Tribal Everglades and the endangered and threatened species that inhabit these areas. The Corps has admitted in the Final GRR/SEIS on the 8.5 Square Mile Area component of the MWD project that *the loss of tree islands has an impact on critical habitats and cultural resources in WCA 3A, delayed implementation of the MWD project will cause an estimated loss of 8.4 islands and 246 acres per year at an estimated cost of $50,000 to $500, 000 per acre.* (Final GRR/SEIS on the 8.5 Square Mile Area, Section 5.2.7, page 64 and Table 7.) In light of the serious environmental and economic costs of delay, the Corps's excuse in the Final RGRR/SEIS Appendix L at Comment 29 that "the true ecological costs of delay can not be determined" (so they didn't do it), is belied by the fact that they have done it before. Placing the blame for delay on CSOP shows how little the person answering the Tribe's comments knows about the MWD Project, which is part of CSOP.

3. The Future Without Project Condition Is Improperly Defined

The Final RGRR/SEIS improperly defines the future without project conditions under NEPA in Section 3. Tamiami Trail modifications are not a Congressionally authorized project. The authorized project is Modified Water Deliveries. Thus, the *future without project condition* for the Modified Water Deliveries Project is NO MODIFIED WATER DELIVERIES PROJECT and not "the future of the study area as it would be expected to develop, if no improvements were

made to Tamiami Trail." It violates NEPA to segment the MWD project. There is no Congressionally authorized "Tamiami Trail Project." If the Corps believes they have authorization to build the Tamiami Trail modifications under MWD, then it is a component of the MWD and the scoping should encompass the entire project area. The Corps' failure to do so merely supports the Tribe's position that the Corps has no authorization to construct a $159 two bridge Recommended Plan under MWD and will have to go back to Congress for funding an authorization. Indeed, the Corps' response to the Tribe's comments at Appendix L, Comment 21 proves the Tribe's point in that it states that MWD operations are not a Tamiami Trail feature. (Note: The Tribe will not reiterate its comments on the FWS CAR since the Corps comments say it has no authority to address the CAR even though its conclusion is contained in the body of the Final RGRR/SEIS. The Tribe incorporates its prior comments in its October 11, 2005 comments. (Exhibit B.)

4. Corps Failed to Adequately Analyze Cumulative Impacts in the Final RGRR/SEIS

NEPA and its implementing regulations require that the cumulative impacts of past, present, and future actions be analyzed in the Final RGRR/SEIS. Section 7.18 of the Final RGRR/SEIS is woefully inadequate in that it only discusses the future impacts of CERP while it turns a blind eye to past and present actions. The Tribe contends that the cumulative impacts analysis must analyze the combined impacts that the delay of the MWD Project, coupled with the impacts of seven years of interim operational plans implemented due to that delay (such as ISOP and IOP), have had on the Tribal lands and endangered species in WCA 3A and other areas of the Everglades. For instance, the endangered Snail Kite population has declined 50% during the years of IOP operations and will be further jeopardized by another five years of these damaging interim water management operations. The Final RGRR/SEIS failed to analyze the cumulative impacts that at least five more years of IOP that will result from the Recommended Plan will have on the Everglades, endangered species, and Tribal lands.

5. The Final RGRR/SEIS Fails to Analyze the Reasonable Culvert Alternative

The Tribe continues to support the additional placement of culverts or minimal road raising, only as necessary, to restore flows to the extent practicable without adversely impacting flood protection and degrading the road bed. The Final RGRR/FEIS fails to analyze this reasonable alternative despite the fact that Appendix D shows the current system has the capacity to convey the required volume of water and provides a hydrological connection to the existing sloughs. Appendix D, Annex A at ¶ 2, ¶ 11 and Table 2.) The Corps failed to analyze the reasonable alternative of the cleaning, widening, and possible placement of additional culverts, as required under NEPA. The Corps response to the Tribe's comments that although the current culverts do have the capacity would allow restoration of natural conditions "to the extent practicable" is nonsensical in light of the fact that the two bridge Recommended Plan will continue to have the L-29 levee restricting flows. (Appendix L at Page 21 and Comment 1.) The comment that cleaning out the culverts would not be as effective as the vegetation would grow back is equally nonsensical in light of the fact that the Corps is obligated to maintain these structures. Id. (Note: The *reasonable* culvert alternative which the Tribe is requesting to be analyzed is not the same as the complicated and expensive $44.3 million dollar Alternative 8 that was analyzed in Section 5.7.2.9 of the previous Draft EIS.)

6. The Draft FWS CAR Analysis of Alternatives is Fundamentally Flawed

In Appendix L, Comment 26, the Corps says the FWS CAR on which it relied it is not subject to comment. The Tribe continues to contend that the FWS CAR analysis in Appendix F is flawed because its scope and study area are also woefully inadequate for the same reasons articulated in section 6 of its October 11, 2005 comments attached as Exhibit B.

7. The Recommended Plan Is Not Within Statutory Authority & Fiscal Constraints

The Tribe suggested inclusion of the WRDA 2000 constraint language on the MWD Project in both the Draft and Final RGRR/SEIS. Even though the Corps included this language, it selected a Recommended Plan that ignores the Congressional directive in it. WRDA 2000 clearly prevents the two bridge Recommended Plan from being built as part of MWD. Moreover, there is no funding to build it. (See, Section 5.7.5 which says, "Construction of alternatives 10, 11, 12, or 14 would also be greater than the amount budgeted.") It is unfortunate that the Corps selected a Recommended Plan that neither it nor DOI has the money to build, while failing to analyze the *reasonable* culvert alternative which could be accomplished within the project authority. The Recommended Plan is *unreasonable* and *unimplementable* under MWD and contrary to the mandate of WRDA 2000, which requires that MWD be completed prior to raising and bridging the Trail.

8. Performance Measures for Alternatives Failed to Include the Cost of Delay

The cost of delay that will be caused to the Miccosukee Tribal lands, and other parts of the Everglades, should have been listed as a performance measure for analyzing the alternatives in the Final RGRR/SEIS. The Corps's excuse in the Final RGRR/SEIS Appendix L at Page 41, Comment 29 that "the true ecological costs of delay can not be determined" (so they didn't do it), is belied by the fact that the Corps did just that in Table 7 of the GRR/SEIS on the 8.5 Square Mile Area Component of the MWD Project, which estimated that about 246 acres of tree islands in WCA-3A are being lost for each year of delay of MWD and that the cost of restoration would be from $50,000 to $500,000 per acre. Thus, the Corps could have easily estimated that for each year of delay of MWD, the cost to restore tree islands lost by delay is $23-$123 million dollars a year in the Final RGRR/SEIS but failed to do so. Delay of the MWD project will also causes damage to Lake Okeechobee, the Caloosahatchee and St. Lucie estuaries and Everglades National Park which should have been assessed, as well. These cumulative impacts and indirect costs required to be assessed by NEPA, were not addressed in the Final RGRR/SEIS.

9. The Final RGRR/ SEIS Improperly Includes the Engineering Report on the Design of the Bridges and Reconstruction of Roadway for the First Time in the FEIS

The Draft RGRR/SEIS improperly excluded the Engineering Report on the design of the bridges and roadway reconstruction from Appendix D. This is contrary to NEPA, which requires that the public be given the opportunity to comment on these important engineering reports both in

the draft and final report. The Tribe contends that it was improper for the Corps to include the engineering report in the Final RGRR/SEIS for the first time.

10. The Environmentally Preferred Alternative Analysis is Flawed

Section 5.7.3 in the Final RGRR/SEIS lists Alternative 17, the skyway, as the plan that maximizes environmental outputs without regard to fiscal or other constraints. The Corps listed but did not respond to the Tribe's comments on this matter because it says the Tribe's comments related to the FWS CAR. Yet, the Corps used the faulty FWS CAR analysis in its Final RGRR/SEIS. The Tribe continues to contend that the quick and economical culvert cleaning, is the true environmentally preferred alternative as it would allow MWD and benefits to 900,000 acres of Everglades wetlands to move forward. The Corps admits in the Final RGRR/SEIS because of cost the skyway cannot be implemented based on WRDA 2000. The Corps also admits it does not have the funding to build the $159 million dollar Recommended Plan. The Final RGRR/SEIS should not have analyzed these unreasonable alternatives.

11. The Corps Fails to Conduct An Adequate Analysis on Impacts to Archeological Sites

The Corps failed to conduct an adequate analysis in the Final RGRR/SEIS on impacts of the Recommended Plan, and the high water that will be caused by the delay of constructing it, on archeological sites, including tree islands. Moreover, the Corps allowed the ad hoc advisory group to remove performance measures for reducing high water in WCA 3A that may have helped determined such impacts.

12. The Corps Failed to Respond to All the Tribe's Comments on the Final RGRR/SEIS

There are numerous instances in Appendix L where the Corps listed, but failed to respond to the Tribe's comments or responded with comments that contradicted the information provided in the Report. (See, for example, Comment 16, 20, 27, 31, 34, 51.) The Corps has a duty under NEPA to respond fully to all the Tribe's comments.

D. THE FINAL RGRR/SEIS FAILS TO COMPLY WITH THE ESA

The project area assessed under the Endangered Species Act ("ESA") in the Final RGRR/SEIS in Section 5.6.5.6 is woefully inadequate. The FWS Section 7 consultation looked at Tamiami Trail construction impacts only (See, Appendix F, August 10, 2005 letter.) The Tribe continues to contend that the area assessed under the ESA should be the entire area analyzed in the 1992 GDM/EIS on MWD. Such an analysis must include any potential adverse impacts to the endangered species on Tribal Everglades in WCA 3A, including the snail kite and the wood stork, that have been caused, and will continue to be caused, by the delay of the MWD Project. This should include the impacts of delay which has caused the IOP to be implemented, which is adversely impacting 88,300 acres per year of snail kite critical habitat as referenced in the March 2002 FWS Amended Biological Opinion. Under the Recommended Plan, IOP will be in place for another five years and those adverse environmental impacts should have been assessed in the Final RGRR/SEIS but were not. There has also been a 50% decline in the endangered Snail Kite

population under IOP operations which has not been analyzed in the Final RGRR/SEIS. The Report also fails to mention that MWD completion is vital to other endangered species, including the wood stork, snail kite, American crocodile and manatee.

E. SPECIFIC COMMENTS ON THE FINAL RGRR/SEIS

1. Project Partners, Section 1.2: The Corps has responded to the Tribe's comment that the Project Partners described in this report, SFWMD, DOI, FWS, ENP, FWC, FDOT and DERM are not all project partners and has named some participating agencies. The fact is that these were really members of an ad hoc advisory team consisting of non-federal entities and consultants that to provided recommendations on Tamiami Trail to the Corps without complying with the Federal Advisory Committee Act (FACA).

2. Study Authority: The Tribe notes that the Corps accepted the Tribe's suggestion from the previous EIS process and provided the exact language of the law in the Final RGRR/SEIS. Section 1 correctly states that: *PI 101-229...authorized the Secretary of the Army to undertake certain action to improve water deliveries to ENP and shall, to the extent practicable, to restore natural hydrologic conditions...* Unfortunately, the Corps' use of a model that provides even greater than CERP water volumes to justify a $159 million dollar Tamiami Trail fix shows they did not follow the "to the extent practicable" directive of Congress.

3. Biological Opinion and Interim Flow Targets: The Tribe disagrees with the discussion of the interim flow targets from the Biological Opinion contained in section 3.3. This section fails to state that the closing of the S-12 structures was the option selected and has been going on for over eight years and has, and continues to be, enormously environmentally destructive to Tribal lands in WCA-3A. The Corps should not base interim flow targets on a faulty Biological Opinion that has never been subject to NEPA review, nor an Amended Biological Opinion, which arbitrarily and capriciously removed the requirement that the MWD Project be completed by December 31, 2003.

4. **Cultural Resources**: Section 5.6.5.6 of the Final SEIS mentions the historical importance of the Coopertown Airboat rides, but continues to fail to mention the historical importance of the authentic Miccosukee Indian Village along old Tamiami Trail, because it claims these areas are outside the project boundary. The Tribe contends the project area is that of the MWD Project. Thus, the Village, which is an historic family camp and the cultural resources that could be impacted by this project, include the cultural resources of the Miccosukee Tribe and peoples, including the tree islands in WCA-3A and other parts of the Everglades. The Tribe is pleased to read that it is the Corps' intent not to impede access to the Osceola and Tiger Tail Camps and will monitor the situation to see that this commitment is met.

5. Tribal Lands: The Final RGRR/SEIS states at Section 7.14 and in their reply to the Tribe's comments that there will be no "direct" impacts on Tribal lands. Section 5.6.14 also claims that "no Tribal lands will be affected." The Tribe is concerned that the Corps can not definitively make this statements because it has not conducted the analysis necessary to find any harm and has improperly narrowed the scope of its analysis to only the Tiger Tail and Osceola Camps. Moreover, statements in Final RGRR/FEIS that visitors to Tribal businesses could be affected

during construction of the Recommended Plan appears to belie this statement and should have been analyzed in the Final RGRR/SEIS. Under NEPA, the impacts on Tribal lands analyzed should include direct, indirect, and cumulative impacts to both Tribal reservation and lease lands in WCA 3A, and the Miccosukee Reserved Area. These lands will all be either adversely or beneficially impacted by the selection of a Tamiami Trail alternative. The scope of the Tribal lands should be the same as it was in the 1992 GDM, and the impact of delay that would be caused by selection of certain alternatives should have been quantitatively and qualitatively assessed but was not. The Tribe appreciates the Corps' statement that there will be no impact to the Tiger Tail and Osceola camps but is concerned that this may also be inaccurate. There is no modeling to show that this is so. The Report states, "coordination with the Osceola Camp is underway to complete its raising prior to implementation of this component." Section 5.6.14. Yet, no analysis exists. In response to the Tribe's comments, the Corps has removed the statement in Appendix H at 10 that, " Relocation of the Osceola Camp is outside the scope of the authorized Corps project. The Everglades National Park (NPS) has accepted responsibility and will make all necessary arrangements for relocation or elevation of the camp." In Appendix L at Page 54, Comment 54, the Corps says the reference to relocation has been removed. The Tribe will continue to monitor the situation and has made it clear that will not accept adverse impacts on the Osceola camp or any interference with their traditional practices.

6. Hurricane Evacuation: Section 5.3.2 discusses hurricane evacuation. The Tribe has continuously told the Corps that even though the Trail may not be a DOT hurricane evacuation route, it is the only route out for the Tribal members who live along the Trail in a hurricane. This reality should have been contained in the Final RGRR/SEIS. However, as the Miccosukee Tribal members and others in the Service Area use Tamiami Trail to travel across the Everglades, the Tribe is pleased to see that the Corps has committed to not impeding the traffic flow during hurricane season. Evacuation access is vital to protect the health and safety of both Tribal members and the public.

7. Compatibility With CERP: The Tribe supports the federal government's desire for compatibility with CERP in Section 5.7.8, but not in a manner that delays the implementation of the Pre-CERP MWD Project. The Tribe does not believe the Recommended Plan offers that compatibility in that it has a potential for political and bureaucratic mischief plus delay. The Corps apparently thinks that despite the WRDA prohibition against bridging the Trail prior to MWD completion, it is okay to bridge the Trail as long as the L-29 levee remains in place. The prohibition against bridging the Trail in WRDA 2000 makes no such distinction. This quibling is an attempt to hood wink Congress into wasting taxpayer money to build a bridge that has a levee still in place. The eminently reasonable culvert cleaning/widening alternative proposed by the Tribe is compatible with CERP and would allow MWD to be expeditiously completed so that decompartmentalization could proceed. The use of the NSM model of greater than CERP acre volumes of water to justify the Recommended Plan is improper and attempts to fool Congress into wasting vast sums of money.

8. Socioeconomic Factors: In Section 5.6.15, the Corps has discarded the performance measure used in the previous EIS to avoid and minimize impacts to the Tiger Tail and Osceola Camps as a constraint in evaluating the alternatives. In the last EIS, the Corps had developed a performance

measure to assess the impacts to the camps, including access, privacy and encroachment, both during and after the construction phase. The Tribe is concerned that the secret advisory team discarded this Performance Measure and cautions the Corps to keep its word that the access to the camps not be impeded. The Tribe reiterates that it will not accept any adverse impacts to either the Tiger Tail or Osceola Camps and that any interference with the traditional use of these camps is non-negotiable. Finally, the Tribe notes that this section mentions for the first time in the Final RGRR/SEIS that a reduction in visitors to the Miccoskee Indian Village, Airboats, Restaurant, and Gas station located west of the project area could be experienced but does not assess the economic impact. Buffalo Tiger and other Tribal members also have airboat concessions along the Trail and the impacts to these concessions have also not been analyzed. Failure to analyze this economic impact to the Tribe in the Final Report violates NEPA. It also fails to mention, or analyze, a reduction in visitors that could occur to the Miccosukee Resort.

9. Hydraulics and Hydrology: In Section 5.3.4 of the Final Report, the Corps has changed its requirement from Section 5 of the 2003 GRR/FEIS, that the final alternative selected need only pass the MWD design volume of 4,000 cfs in favor of an NSM model that passes 1372 acre feet of water which is even greater than the 921 acre feet of CERP D13R. This section now substitutes language concerning the L-29 canal only. The Final RGRR/SEIS fails to contain a hydrological analysis of NE Shark River Slough to show whether the Recommended Plan is even necessary using 4,000 cfs. This is improper under NEPA which requires a full disclosure document.

10. Costs and Section 902: The initial GRR on Tamiami Trail contained a $20.215 million dollar cost constraint on the Tamiami Trail component of the MWD project. Section 5.7.5 of the Final RGRR/SEIS contains no cost constraint but refers to the DOI Capital Assets Plan. Moreover, this section provides evidence that the $159 million dollars for the Recommended Plan exceeds the amount in the DOI Capital Assets Plan. The Final RGRR/SEIS is supposed to be a full disclosure document and should include only the funding currently in hand as a cost constraint. The blank check mentality of DOI and the Corps is due to the failure to comply with Section 902, which provides that the costs of MWD water can not exceed a certain percentage without going back to Congress. When the PCA for MWD was signed in 1994, the $81 million dollar project cost escalated to $114 million. The cost is now at $400 million. It is astounding to think that the Corps would even think of spending $159 million dollars that it does not have on a Recommended Plan for a mere component of an entire project that was initially authorized at $81 million dollars. Only through the application of Section 902 will this blank check mentality of the agencies be stopped.

11. WRDA Constraint Language: Although the Final RGRR/SEIS contains the WRDA 2000 constraint language, the Corps ignored the language in selecting its Recommended Plan.. Section 601(b)(2) of WRDA 2000 prevents CERP components from being funded until the MWD Project is completed. Despite this Congressional mandate, the Corps refuses to recognize that it is incumbent on it select an alternative that is within the funding constraints and statutory authority of PL 101-229 and WRDA 2000. Neither the Corps not DOI has funding to construct the Recommended Plan. Moreover, the Corps appears to incorrectly think that raising and bridging Tamiami Trail is not contrary to WRDA 2000, as long as the L-29 levee is not removed. This "quibling" is dangerous and will not bode well with Congress if they discover the agencies are funding the bridging that WRDA 2000 prohibits. Moreover, Congress and the public will be even

more incensed to learn that the Corps is wasting precious tax dollars by constructing white elephant bridges that will do little for flow with the levee still in place.

12. Betterments: The Final RGRR/SEIS finds that betterments to protect and enhance wildlife are not part of the project purpose. The Tribe urges the Corps to make certain that any DOI or SFWMD decision to incorporate them does not delay MWD.

13. Flood Damage to Road: Section 4.3 Of the Final Report raises concerns about saturation and overtopping of the road, but fails to contain an analysis that uses the 4,000 cfs predicted maximum MWD flow to show whether this would happen. Instead, the Corps and DOI have improperly used modeling with NSM Version 4.6.2 that provides far more acre feet of water than was authorized for CERP to determine impacts. (Appendix D, Annex A at Table 3.) The Tribe contends the cleaning, widening and placement of additional culverts as necessary, would provide such flows as are "practicable" and would allow MWD to be completed and CERP to move forward. The Tribe has consistently supported only such infrastructure as is necessary for the Tamiami Trail component of the MWD Project, but has also emphasized that Tribal and public safety are of the utmost importance and must be protected both during and after construction. It should be noted that Section 3.4 states that water would begin overtopping the highway at an event frequency of between 200 and 500 years, which is well above the 100 year frequency that is usually the design basis. Through the use of NSM Version 4.6.2, and an excessive design frequency, the Corps has exceeded its authority, over-designed the Trail component and will cost taxpayers to waste $159 million dollars. This section also states that Tamiami Trail is currently in need of maintenance, which is state responsibility and should not be shoved off onto the federal taxpayer. The state's needed maintenance could have been combined with the federal government's selection of the culvert clearing/widening alternative to reduce the cost and delay of the project

14. No Schedule or Project Implementation Date: The Final RGRR/SEIS contains no schedule for completion for Alternative 14. The 2003 Final RGRR/SEIS stated in Section 6.12 stated that the duration of the construction of the Plan would be 24 months. The 2005 Final RGRR/SEIS says the construction of the Recommended Plan will take approximately 36 months. The Tribe contends that the date the project could be completed should have been a factor in screening alternatives and must be included in the Final EIS. Failure to obtain Congressional authorization or funding for the Recommended Plan could delay MWD and CSOP beyond the new 2010 completion date.

15. Transportation: Section 5 of the Final RGRR/SEIS states that Tamiami Trail will continue to be accessible during storms and hurricanes under the proposed Alternative 14. The Tribe reiterates that the Corps must take all precautions that both transportation and the safety of the Tribe and the public not be compromised during, or after, construction.

16. Impact on Tribal Lands: The statement in Sections 7.14 and 5.6.14 that no tribal lands would be affected and that there will be no direct impacts of any alternatives on Tribal lands is not supported by evidence in the record or the document itself. The Final RGRR/SEIS continues to fail to assess the indirect and secondary and cumulative impacts to Tribal lands that the construction of the Recommended Plan would have by delaying the MWD project will continue to have on Tribal Everglades in WCA 3A. Moreover, the Final RGRR/SEIS fails to use the greater than CERP

water volumes used to predict impacts to the bridge to analyze impacts to the Tiger Tail and Osceola Camps. It also fails to conduct an analysis of these flows on the MRA and other Tribal properties.

17. Impact on Businesses: The Final RGRR/SEIS fails to adequately assess the impact that would be caused to Tribal businesses by any alternative that delayed MWD or provided greater than CERP acre feet of water. While the Final RGRR/SEIS finally admits construction of the Recommended Plan could impact visitors to certain Tribal businesses, it fails to analyze the potential impacts, including economic, that it will have on the Miccosukee Resort and Gaming Facility, and the Tribe's Miccosukee Indian Village, Airboats, Restaurant, and Gas Station whose customers use Tamiami Trail.

18. Osceola Camp: The advisory team utilized by the Corps removed the analysis of impacts to the Osceola Camp as a Performance Measure. Without such a PM, the Tribe is concerned that the statement of no impact to the Osceola Camp may be inaccurate. The Final RGRR/SEIS does not analyze the impact that providing the greater than CERP acre feet of water will have on the Osceola Camp. While the Corps contends the large volume of water used to justify the bridge alternative will not be provided under MWD, it is clear that the bridge is being built to accommodate it. Thus, there is no reason to believe that DOI will not demand these water levels. The Final RGRR/SEIS dismisses the Osceola concerns by stating that "DOI is coordinating with the Osceola Camp to complete its raising prior to implementation of this component of MWD." Section 5.6.14. The Corps has a duty to conduct an analysis. The Tribe notes that the Corps has removed the offensive statements in the Real Estate Appendix H at 10, that: " Relocation of the Osceola Camp is outside the scope of the authorized Corps project. The Everglades National Park (NPS) has accepted responsibility and will make all necessary arrangements for relocation or elevation of the camp." While the Corps contends that the Tribe misunderstood the word "relocation," and that there is no intention to do that, the Tribe will continue to monitor the situation. As stated earlier, the Tribe will not accept adverse impacts on the Osceola camp, or any interference with their traditional practices.

19. Tiger Tail Camp: The advisory team utilized by the Corps removed the analysis of impacts to the Tiger Tail Camp as a Performance Measure. Without such a Performance Measure, the Tribe is concerned that the statement of no impact to the Tiger Tail camp is inaccurate. The Final RGRR/SEIS has not analyzed what impact providing greater than CERP acre feet of water, as used in the modeling, will have on the Tiger Tail Camp in the Final RGRR/SEIS. While the Corps contends these large volumes of water used to justify the bridge alternative will not be provided under MWD, it is clear that the bridge is being built to accommodate it. Thus, there is no reason to believe that DOI will not demand these water levels. As stated earlier, the Tribe will not accept adverse impacts on the Tiger Tail Camp, or any interference with their traditional practices.

20. Environmental Justice: Section 5.6.18 claims, without the requisite analysis, that no long term impacts would be created for the residents of the Tiger Tail and Osceola Camps. The Tribe is concerned that the Corps' advisory team has removed the previous Performance Measure that would have allowed it to conduct the necessary analysis of potential adverse impacts of alternatives on the Tiger Tail and Osceola Camps. The Tribe contends that the Corps must ensure

that the project is not likely to affect the environmental health or safety, and traditional way of life, of either the Tiger Tail or Osceola Camps. The Corps also failed to analyze the disparate impacts to Tribal Everglades and its culture and way of life due to the failure to implement the MWD Project in this section in the Final RGRR/SEIS. The Recommended Plan will delay MWD, and adversely and disproportionately impact, the Miccosukee Tribe of Indians. These impacts have not been analyzed.

21. Public Involvement: Section 9.1 claims that the Corps complied with USACE and NEPA policies and sought public input. The Corps also claims in its response to the Tribe that it complied with FACA. (Appendix L at Comments 17 and 18.) In reality, the process conducted by the Corps was a secretive back door process which excluded the public. An ad hoc advisory group, which did not comply with FACA, met in private and invited the public in after the decisions were made to feign "public involvement." This is contrary to both FACA and NEPA. While the Corps contends the group did comply with FACA, this is incorrect. This group was never constituted under FACA, meetings were never published in the Federal Register, and other requirements of FACA were not met.

22. Public Agency Meetings: This section finally removes a misleading statement about the Miccosukee Tribe which it has asked to be removed many times.

23. Water Quality: Section 2.3 purports to analyze water quality of the project. In the prior EIS process, the Tribe contended that its unanalyzed culvert alternative would allow any traffic runoff to continue to be treated at the shoulder. Section 2.2 discusses the massive S-9 pump, which discharges water to the Everglades and the Park under MWD. The Final RGRR/SEIS fails to contain an analysis of the pollutants that will have to be cleaned up from these S-9 discharges before the project is implemented. The Corps contends that this will be done under CSOP.

24. Safety: As stated throughout these comments, the Tribe insists that both Tribal and public health and safety be strictly maintained both during, and after, construction of the Tamiami Trail modifications. The Tribe contends that if the Corps had not allowed modeling to be used that incorporates greater than CERP acre feet of water on a project that only needs to pass 4,000 cfs, the current system would be able to pass flows "to the extent practicable" and safety would not be an issue. The Corps is not required the massive volumes of water DOI is insisting on under MWD, only what is "practicable" and consistent with the public health and safety.

25. Tamiami Trail List of Preparers: NEPA requires an EIS to be a full disclosure document. The Tribe disputes that the list of preparers at page 145 is the full list of people who contributed to this document. NEPA requires this document to include the name of the advisory team and anybody else who worked on the RGRR/SEIS process.

F. THE CORPS DID NOT MEET ITS TRUST RESPONSIBILITY TO THE MICCOSUKEE TRIBE IN THE RGRR/SEIS PROCESS

The RGRR/SEIS process was not consistent with the Corps' Trust Responsibility to the Tribe. The Tribe was asked to attend "interagency meetings" in the prior Tamiami Trail EIS

process, which it insisted be public meetings. This time, despite the fact that the Tribe directly asked the Corps to be included in the process, it was excluded from the meetings which were secretly held without both the Tribe and the public. The Tribe only found out about these secret meetings, which discussed matters that had a direct impact on the Tribe, when documents were leaked. This is not only discouraging, it is also contrary to the Corps' Trust responsibility to the Tribe. The Corps has a duty to conduct meaningful pre-decisional consultation. The Corps' response to the Tribe's comments that it was invited to attend all public meetings is insulting and does not meet this requirement. Appendix L at Page 58, Comment 62. The Corps has a solemn trust responsibility to choose a plan that will protect Tribal natural resources and Trust resources and should have rejected the Recommended Plan because it will cause further destruction of Tribal lands. The Corps' selection of Alternative 14 as the Recommended Plan in the Final RGRR/SEIS does not meet its Trust Responsibility and will ensure continued destruction of the Tribe's Everglades homeland.

III. CONCLUSION

The Recommended Plan selected in the Final RGRR/SEIS is not consistent with the Project Purpose in PL 101-229, WRDA 2000, and the Corps' solemn Trust Responsibility to the Miccosukee Tribe. The review process did not select a plan that meets the project purpose, and that will allow the expeditious completion of the MWD Project that will benefit 900,000 acres of the Everglades. The Recommended Plan is expensive, unnecessary to pass the projected 4,000 cfs MWD flow, and/or the amount of water that is "practicable," and is not authorized under Public Law 101-229 and the 1992 MWD GDM that was approved by Congress. The Tribe is disappointed that the Corps did not resist political pressure from those who refuse to abide by the purpose and authority of MWD and has embraced an unwise plan that is contrary to WRDA 2000 and will cause further delay of the restoration of the only Everglades in the world.

Sincerely,

Dexter W. Lehtinen

cc: Chairman Billy Cypress

Table 3
Average Annual Overland Flow Across Tamiami Trail
(Transect 17 = WSS and Tansect 18 = ESS)

SFWMM Simulation	Transect 17 1000 acre-ft	Transect 18 1000 acre-ft	SRS Total 1000 acre-ft	% Distribution West / East
NSM 4.6.2	477	895	1372	35% / 65%
D13R	434	487	921	47% / 53%
CERP0 *	398	509	907	44% / 56%
Alt7R5	623	172	795	78% / 22%
No Action	376	493	869	43% / 57%
East Bookend (CSOP)	452	516	968	47% / 53%
West Bookend (CSOP) **	447	597	1044	43% / 57%
West Bookend (b) (CSOP)	451	683	1134	40% / 60%
Alternative 3 (CSOP)	527	631	1158	46% / 54%
Alternative 4 (CSOP)	434	540	974	45% / 55%
Alternative 5 (CSOP)	437	538	975	45% 55%

*CERP0 flows at T18 do not include S-356 flows, which discharges south of T18 into NESRS
** Used in RMA-2 Analysis

MICCOSUKEE TRIBE'S

EXHIBIT A

LEHTINEN VARGAS & RIEDI
ATTORNEYS AT LAW
A PROFESSIONAL ASSOCIATION

October 11, 2005

MICCOSUKEE TRIBE'S
EXHIBIT B

Colonel Robert Carpenter
District Commander
Jacksonville District
Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, Florida 32207

Via Fax, E-mail, and Regular Mail

Re: Miccosukee Tribe's Comments on the Draft Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modifications

Dear Colonel Carpenter,

The Miccosukee Tribe of Indians of Florida hereby provides comments on the U.S. Army Corps of Engineers ("Corps") Draft Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement ("RGRR/SEIS") for the Tamiami Trial Modifications dated August 2005. The Tribe also incorporates by reference its Comments on the Final GRR/EIS on Tamiami Trail dated 2003, the Draft GRR/SEIS dated February 4, 2002, and the comments made at all public meetings.

The Miccosukee Tribe ("Tribe") objects to the so-called "Tentatively Selected Plan," Alternative 14. The Tribe does not believe that Alternative 14 is a legally viable option. The Corps has no authority for a Tamiami Trail Project. It only has authority for the Modified Water Deliveries Project ("MWD") of which Tamiami Trail is only a component. Any Tamiami Trail modification must be consistent with MWD authority and Congressional directives. The Corps' selection of any bridging option is nothing more than a thinly veiled attempt to build the CERP decompartmentalization component. Congress authorized MWD in 1989 and promised it would be completed by 1997. After nearly a decade of delay, Congress wanted to ensure that MWD would get the attention it deserves and be implemented. Therefore, when the Congress passed WRDA 2000, it specifically required completion of the MWD Project prior to authorization of the Comprehensive Everglades Restoration Plan ("CERP") Decompartmentalization Project. WRDA 2000 mandates: "No appropriation shall be made to construct the Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement Project (including...Raise and Bridge East

7700 N. KENDALL DRIVE, SUITE 303 MIAMI, FLORIDA 33156 TELEPHONE (305) 279-1166 FAX (305) 279-1365

Portion of Tamiami Trail...) until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades national Park Protection Act of 1989 (16 U.S.C. 410 r-8)." Congress clearly anticipated exactly what the Park and Corps are now attempting to do - and prohibited it. Alternative 14 and any alternative that bridges Tamiami Trail as part of MWD, cannot, and will not, stand up to a legal challenge.

The Tribe contends that Alternative 14 is unnecessary, expensive, and delay provoking. The Tribe is disappointed that the Corps has not analyzed the reasonable alternative of clearing, enlarging, and if necessary, constructing some additional culverts to allow the 4,000 cfs MWD flows to pass. Alternative 14, the Two-Mile Bridge West and 1 Mile Bridge East Alternative, is estimated to cost the taxpayers over $125 million dollars and is totally unnecessary to the completion of the MWD Project. Under the provisions of the 1898 Everglades National Park Protection and Expansion Act, Secretary of the Army is only authorized to take those steps necessary to restore natural hydrologic conditions to the extent practicable under MWD authority. That is to say, even if the desired 4000 cfs flows are not practicable, then the Secretary of the Army will meet his legal obligation to restore flows to the extent practicable. The Draft RGRR/SEIS, however, shows that the current system has the hydraulic capacity to pass the required MWD flows. (Section 5.6.5.1 and Appendix D at para 3.) Appendix D also shows that the modeling used NSM 4.6.2 for the design high water for roadway improvements, which means that 1372 acre feet, which is even greater than the 921 acre feet of CERP D13R flows used in the Yellow Book adopted by Congress in WRDA 2000, was improperly used to model alternatives. (Appendix D, Table 3.) The Corps is not obligated, or authorized, to send every drop of water demanded by the Park.

By the Corps' own admission, the culverts under Tamiami Trail, which have existed for 50 years, should continue to provide service for an additional 50 years. Unfortunately, the culverts are currently blocked with sediment and heavy vegetation built up on the discharge side. Incredibly, Everglades National Park ("Park") staff have stubbornly refused to allow the sediment/vegetation blockage to be removed. Thus, the Park is preventing the water - which they claims they want - from being delivered through the existing culverts. Moreover, the S-12s also show extreme blockage and restriction of flow and should also be cleaned out. Instead, based on faulty assumptions and modeling chicanery, the Park has manipulated the Corps into building a bridge which wastes taxpayer money and violates the prohibition against constructing CERP Decompartmentalization before the MWD is completed. Now, both agencies are attempting to fool Congress into thinking the white elephant bridge is necessary to complete MWD.

It is clear that if the Park only wanted the additional 4000 cfs water, they would insist on cleaning the downstream discharge areas of the culverts. Table 2 of the RGRR/SEIS shows the discharge ratings of the Tamiami Trail culverts. It is obvious that the culverts are not currently discharging at the capacity which they were designed for, and for which they are capable. Over the past 50 years, sediment and heavy vegetation have created small islands immediately downstream of the culvert discharge points. Only after these blockages have been cleared, and the requirements in Tribe's Tamiami Trial Tenets described below are met, will it ever support the bridging of Tamiami Trail. In reality, the modeling trick used in the RGRR/SEIS shows that the Park, not happy with MWD flows, is attempting to get more acre feet of water than Congress even

authorized for CERP. (*See*, Section 4.62 and Appendix D, Table 3.) The RGRR/SEIS is a veiled attempt to fool Congress and the public into wasting money on an unnecessary bridge for a Pre-CERP project the cost of which has all ready escalated more than 300%. Contrary to NEPA, the woefully deficient Draft RGRR/SEIS even fails to contain an Engineering Report on the design of the bridges and reconstruction of the roadways for the public to comment on.

The Corps claims they have reopened the EIS process because the Department of Transportation's ("DOT's") safety concerns have increased the costs of the prior selected Alternative 7a, the 3,000 ft. bridge. It fails to tell the public that DOT was provided with modeling for far more water than MWD was authorized to deliver. The real reason for the new SEIS is hinted at on page 1 which states that DOI determined that water in the L-29 canal would be at a higher design stage than had been previously calculated. The Corps again fails to disclose that DOI modeling was also based on much more water than MWD was authorized to deliver. Moreover, the Corps' dismal failure to implement a plan once it was selected in 2003 has caused a price increase in all the alternatives. The cost of the skyway, 4 mile bridge, and skyway has escalated dramatically. The Corps also continues to refuse to calculate the costs, both economic and environmental, that have occurred to the Everglades as a result of their failure to act. The lengthy, unwieldy title of this document is indicative of the delay to the MWD Project that has been caused by DOI's continued attempts to implement the 8.4 billion dollar CERP through this originally estimated $81 million dollar Pre-CERP project. The expeditious implementation of this long delayed restoration project is vital to the Tribal Everglades, which supports the culture and way of life of the Miccosukee Tribe.

In the first Tamiami Trail EIS process, the Tribe provided its Tamiami Trail Tenets. The Tribe's goal was then, and is now, to help the Corps select a plan that is economical and within its statutory authority under PL 101-229, so that MWD would be implemented expeditiously. Completion of MWD, as the Draft RGRR/SEIS correctly states is a prerequisite to WCA 3A Decompartmentalization under CERP. Thus, any delay in the MWD Project, or its Tamiami Trail component, would delay CERP. The Tribe has reiterated its Ten Tamiami Trail Tenets in Section I below, while recognizing that unfortunately both for the Tribe and the Everglades, the December 31, 2003 deadline for the completion of MWD has long ago passed. The Tribe recalls that under Colonel Salt in 1992, the MWD EIS was presented to Congress and claimed that the $81 million dollar project would be completed by 1997. Under Colonel Rice, the Project Cooperation Agreement ("PCA") was signed to construct what had already escalated from an $81 million to a $141 million dollar project. Under Colonel Miller, the MWD Project was supposed to be completed by December 31, 2001. Colonel May, who followed Miller, set a completion date of December 31, 2003, which again was not met. When Colonel Carpenter took over he pledged to complete the project by December 31, 2006. The project cost has now escalated to at least $400 million dollars and its completion date has been delayed to at least 2010. Today, this Pre-CERP restoration project, so important to the Tribe and the Everglades, remains mired in morass. The selection of Alternative 14 will only add to the cost and contribute to more delay.

I. THE MICCOSUKEE TRIBE'S TEN TAMIAMI TRAIL TENETS

The Tribe submitted the following Ten Tamiami Trail Tenets in the prior EIS process and incorporates them again herein without updating them noting that the 2003 date has passed. The Tribe believes that the Corps could still meet the December 31, 2006 deadline if it adopted a culvert alternative and operated to pass as much water as is practicable while maintaining flood control and public health and safety. The Tribe's Ten Tamiami Trail Tenets are:

1. The Tribe is opposed to all plans that will elevate Tamiami Trail before the Modified Water Deliveries Project is completed and implemented, including the protection for the 8.5 Square Mile Area mandated by PL101-229. (The Tribe opposes a *skyway*.) The Tribe believes that the Corps should take maximum advantage of existing infrastructure in place, and should only add new infrastructure that is absolutely essential to protect public health and safety and to meet the requirements of the Modified Water Deliveries Project, as directed by PL101-229.

2. The Corps' selected alternative must ensure that the Modified Water Deliveries Project is completed and operational on, or before, December 31, 2003. (Note: 2003 date has passed.)

3. Any alternatives that have no funding and would delay the Modified Water Deliveries Project beyond December 31, 2003, should be deemed "unreasonable" and removed from further consideration as the Tamiami Trail component of the Modified Water Deliveries Project Draft RGRR/SEIS. (Note: 2003 date has passed.)

4. Any plan recommended by the Corps for Tamiami Trail must be consistent with the requirements of PL101-229, the Water Resources and Development Act of 2000 (WRDA 2000), the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA) and the Corps' trust responsibility to the Tribe.

5. The Tribe will oppose any plan to modify Tamiami Trail that has an adverse impact on the Tiger Tail and Osceola Camps. Any interference with the traditional use of these camps is non-negotiable.

6. The Tribe will oppose all plans to elevate Tamiami Trail until I-75 is also elevated.

7. The Tribe will oppose all plans to elevate Tamiami Trail until all the levees are pushed into the canals (e.g. the L-29 and Miami canal); and will oppose any plan that elevates Tamiami Trail that does not remove the levee that separates WCA-3A and WCA-3B from the L-29 canal, with any such decompartmentalization plans being contingent upon the provisions in Tenet 8.

8. Control of the water at Tamiami Trail must not be given up under any future CERP decompartmentalization plans until it is absolutely certain that the flow north and south of the Trail are compatible. This cannot be done until the component of the flow lost to Miami-Dade and Broward Counties has been reinstated via the Comprehensive Everglades Restoration Plan (CERP), which is based on technologies that are so suspect that each requires a pilot study prior to proceeding.(i.e. in ground reservoirs, wastewater reuse and L-31 North seepage control.)

9. The Corps must operate the water management system to ensure that the access and egress of the Miccosukee Tribe is not jeopardized until such time as Tamiami Trail is modified to the extent necessary to protect it from degradation due to higher water levels during those events which would threaten the stability of the road.

10. While attempting to make the Tamiami Trail component of the Modified Water Deliveries Project compatible with CERP is a noble goal, it must not delay this already seriously delayed project, which only authorizes those flows directed in PL101-229, or compromise the health and safety of the public or the Tribe.

II. SPECIFIC COMMENTS ON THE DRAFT RGRR/SEIS

A. AN AD HOC ADVISORY TEAM, WHICH FAILED TO COMPLY WITH FACA, MADE RECOMMENDATIONS ON PLAN & BRIDGE PLACEMENT

Contrary to the Federal Advisory Committee Act ("FACA"), the Corps assembled a team of non-federal entities and consultants who developed performance measures and screened alternatives at two secret, non-public meetings on May 23-26 and July 6-7, 2005. (Section 5.21.) This advisory group adopted the faulty Park analysis and allegedly prepared the MWD Tamiami Trail Modification Benefits Analyses Procedures dated August 2005 attached as Appendix E to the Report. While the Corps attempts to paint this advisory group as a fact finding team, it is clear that it made policy recommendations. The Corps improperly delegated their statutory authority to this advisory group. This group not only deleted performance measures from the last EIS process, it also deleted old one, created new ones, and revised and changed objectives.

Moreover, contrary to the National Environmental Policy Act ("NEPA",) the group failed to analyze all reasonable alternatives for Tamiami Trail. Thus, the Draft RGRR/SEIS fails to contain the viable culvert alternative. Instead, the document analyzes and rubber stamps new alternatives that were screened and developed by an ad hoc advisory team that met in a non-public process. The new words for the recommended alternative, "tentatively selected plan," do not hide the fact that an advisory group that is not constituted under the Federal Advisory Committee Act ("FACA"), screened and "recommended" alternatives. The "Tentatively Selected Plan," Alternative 14, consists of two bridges. The western bridge is to be sited between the Blue Chanty Canal and one-half mile east of the Osceola camp. The eastern bridge is to be sited approximately one mile west of the S-334 and will extend to the west for approximately one mile.

The Tribe continues to contend from a hydrologic, hydraulic, and environmental point of view, that the best way to distribute flows across Tamiami Trail is by clearing out and utilizing the existing culvert system. Depending on the ultimate flows to be passed, it may be necessary to increase the size and/or number of culverts, but passing the water on a broad front that mimics historic flow patterns and distribution must be better than concentrating flows at one point as the bridge will. Even if the two bridge alternative was necessary, which the Tribe contends it is not, it should be positioned to be both effective and non-obtrusive. The current proposed location meets neither of these goals. The heart of Shark River Slough is several miles to the east of the proposed

location, roughly in the middle of the 6.5-foot contours. This is readily apparent from topographic maps or satellite images. It would be only logical and prudent to place the longer bridge in the east, so that it passes larger quantities of waters along historic flow lines. Alternative 14 does not. Also, the current proposed location for the western bridge could force water to flow to the southeast, in an unnatural way, until it intersects the historic flow path and turns back to the southwest. In addition, the proposed locations forces the water to circumvent a good portion of NE Shark River Slough, thus losing restoration benefits and wasting the tens of millions of dollars spent to forcibly buy out many residences in the 8.5 Square Mile Area allegedly to permit the raising of water in this area. Placing the larger bridge to the east would also help abate any impacts to the Tiger Tail and Osceola Indian Camps, which is a Tribe priority. The Corps should also conduct modeling to analyze how Alternative 14 would impact the Miccosukee Reserve Area (MRA). With the entire L-67 Extension removed, and with most of the water being released much closer to the MRA, one can logically expect that water levels around and/or in the MRA will increase, thus potentially creating flooding problems for the Tribe. This must be analyzed in the Final Draft RGRR/SEIS.

B. DRAFT RGRR/SEIS FAILS TO COMPLY WITH NEPA

1. RGRR/SEIS Improperly Segments the Modified Water Deliveries Project

Contrary to the conclusion in Section 1.4, the Tribe contends the Draft RGRR/SEIS fails to comply with the National Environmental Policy Act ("NEPA"). The Tribe contends that the Corps has improperly segmented the MWD Project into separate components, such as the 8.5 Square Mile Area, Tamiami Trail, and Seepage Control components, contrary to the National Environmental Policy Act (NEPA). The 1992 General Design Memorandum ("GDM") and EIS for the MWD Project detailed the condition of the environmental and resources within a much larger study area than is currently being analyzed in the Draft RGRR/SEIS. Tribal lands in WCA 3A, a 915 square mile area, were included in the impacted area in the 1992 GDM but are excluded from the analysis in the Final GRR/SEIS. NEPA clearly provides that connected projects should be evaluated in a single Environmental Impact Statement (EIS). (40 C.F.R. § 1502.4). The Council on Environmental Quality (CEQ) regulations governing NEPA state that, *proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.* When the Corps prepared its GDM for the MWD Project in 1992, it evaluated all aspects of this interrelated project in a single EIS. This improper segmentation has caused the Draft RGRR/SEIS to fail to adequately assess impacts on Tribal lands and resources.

2. The Draft RGRR/SEIS Improperly Narrows the Purpose, Scope and Study Area

The narrow purpose and scope in Section 1.3 of the Draft RGRR/SEIS allows the impacts of delay, especially those to the Tribal lands in WCA-3A, to remain unassessed and skews the analysis of the alternatives. It should be noted that Section 104(3)(d) of PL. 101-229, which directed the Corps to construct the Modified Water Deliveries Project, says that the *project modifications are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the Park in particular.* The purpose and scope should be that of the MWD that is

contained in the 1992 GDM, which included the Water Conservation Areas, Northeast Shark River Slough and the Shark River Slough Basin of Everglades National Park (ENP). The 1992 GDM stated that: *when fully operational the MWD project will benefit the ecosystem function and habitat value of approximately 100,000 acres of wetlands in NESRS, 600,000 acres of wetlands in WCA-3A and 200,000 acres of wetlands within the Shark River Slough basin of ENP.* Thus, the described benefits in the Draft RGRR/SEIS should include these areas that comprise 900,000 acres of Everglades wetlands.

Due to the failure of the Corps to broaden the study area, and consider the serious environmental harm being caused by the failure to complete MWD, the Draft RGRR/SEIS omits issues of vital importance, such as the impact of the project and project delays on Tribal Everglades and the endangered and threatened species that inhabit these areas. The Corps has admitted in the Final GRR/SEIS on the 8.5 Square Mile Area component of the MWD project that *the loss of tree islands has an impact on critical habitats and cultural resources in WCA 3A, delayed implementation of the MWD project will cause an estimated loss of 8.4 islands and 246 acres per year at an estimated cost of $50,000 to $500, 000 per acre.* (Final GRR/SEIS on the 8.5 Square Mile Area, Section 5.2.7, page 64 and Table 7.) In light of the serious environmental and economic costs of delay, the Corps must assess the cost of delay associated with the selection of each of the alternatives in the Final RGRR/SEIS.

3. The Future Without Project Condition Is Improperly Defined

The Draft RGRR/SEIS improperly defines the future without project conditions under NEPA in Section 3. Tamiami Trail modifications are not a Congressionally authorized project. The project is Modified Water Deliveries. Thus, the *future without project condition* for the Modified Water Deliveries Project is NO MODIFIED WATER DELIVERIES PROJECT and not "the future of the study area as it would be expected to develop, if no improvements were made to Tamiami Trail." It violates NEPA to segment the MWD project. (It should be noted that the Final GRR/SEIS had a "design flow" of 4,000 cfs which has been removed from this section of the new report.) There is no Congressionally authorized Tamiami Trail "project." It is merely a component of the MWD project. The failure to define the true without project condition of MWD, as required by NEPA, has resulted in a skewed analysis of alternatives in both the Draft RGRR/SEIS and the Fish and Wildlife Service (FWS) Draft Coordination Act Report (Draft CAR). The CAR analysis also fails to properly assess the impact that the delay of the MWD,, which will be caused by the selection of bridging alternatives, will have on hundreds of thousands of acres of Tribal Everglades and the wildlife in WCA 3A, as well as other areas of the Everglades. Nor does it properly analyze the benefits that MWD will have on hundreds of thousands of acres of wetlands, which would negate any claim that the Corps should somehow mitigate for the Tamiami Trail impacts.

4. Cumulative Impacts Are Not Adequately Assessed in the Draft RGRR/SEIS

NEPA and its implementing regulations require that the cumulative impacts of past, present, and future actions be analyzed in the Draft RGRR/SEIS. Section 7.18 of the Draft RGRR/SEIS is woefully inadequate in that it only discusses the future impacts of CERP while it

turns a blind eye to past and present actions. The Draft FWS also does the same. The Tribe contends that the cumulative impacts analysis must analyze the combined impacts that the delay of the MWD Project, coupled with the impacts of seven years of interim operational plans implemented due to that delay (such as ISOP and IOP), have had on the Tribal lands and endangered species in WCA 3A and other areas of the Everglades. For instance, the endangered Snail Kite population has declined 50% during the years of IOP operations and will be further jeopardized by another five years of these damaging interim water management operations. The Draft RGRR/SEIS must analyze the cumulative impacts that at least five more years of IOP that will result from Alternative 14 will have on the Everglades, endangered species, and Tribal lands.

5. The Draft RGRR/SEIS Fails to Analyze Reasonable Alternatives and Incorrectly Analyzes, But Correctly Rejects, the Unreasonable *Skyway* Alternative 17

As stated previously, the Tribe supports the additional placement of culverts or minimal road raising, only as necessary, to restore flows to the extent practicable without adversely impacting flood protection and degrading the road bed. The Tribe rejects the cost excessive, delay producing Alternative 17 listed in Section 5.4 and believes it should not have been analyzed in the Draft RGRR/SEIS because it is *unreasonable* in the NEPA context. Indeed, years have been wasted because the Corps did not reject the *skyway* alternative early in the last EIS process. The Tribe supports the Corps' decision to not select the ten mile bridge due to fiscal restraints, but contends the Corps also does not have the authority to construct it. The Tribe contends that all bridging alternatives should be rejected from being analyzed in the FEIS for lack of funding and authority. Instead, the Corps should analyze the cleaning, widening, and possible placement of additional culverts as a reasonable alternative. It should be noted that the *reasonable* culvert alternative which the Tribe is requesting to be analyzed is not the same as the complicated and expensive $44.3 million dollar Alternative 8 that was analyzed in Section 5.7.2.9 of the previous Draft EIS.

6. The Draft FWS CAR Analysis of Alternatives is Fundamentally Flawed

The FWS CAR analysis in Appendix F of the Draft RGRR/SEIS is flawed because its scope and study area are also woefully inadequate. It only analyzes the impacts that the road will have on the direct area of 11 miles and does not assess the impact that the delay of building alternatives, such as the skyway or two bridges, would have on wetlands throughout 900,000 acres of Everglades that are included in the study area of the 1992 GDM on the MWD project. Additionally, it does not analyze the overwhelming wetland benefits that the completion of the MWD project would bring. The alternatives analysis is also incorrectly based on a *future without project condition* that is really a *future with project condition* because it considers the MWD project completed, instead of the *project not completed condition* that would result from the delay. A proper analysis that factored in the wetland destruction being caused by the failure to implement the MWD project would result in the selection of the alternative that would allow MWD to be completed expeditiously, and would not have resulted in the delay producing *skyway* alternative being selected as an *environmentally preferred alternative*.

7. Any Plan Must Be Based on Statutory Authority & Fiscal Constraints

The Tribe suggested and supports the Corps' inclusion of the WRDA 2000 constraint language on the MWD Project, and statutory authority and fiscal constraints, in the Draft RGRR/SEIS. WRDA 2000 clearly prevents the bridge alternatives from being selected. Moreover, neither the Corps nor DOI have the funding to build them. The Tribe contends that the *reasonable* culvert alternative, which includes the clearing and widening of culverts, and constructs any more necessary to pass flows, must be analyzed in the Final RGRR/SEIS. The skyway and other bridge alternatives are *unreasonable* and *unimplementable* under MWD and contrary to the mandate of WRDA 2000, which requires that MWD be completed prior to raising and bridging the Trail. The Tribe is concerned that Alternative 14, which places a longer bridge is the area of lesser flows, may be a trick, and that there is some undisclosed plan to substitute the *skyway* before it is built. Since NEPA is a full disclosure document, the Corps must clearly outline any potential future plans that they are aware of in the Final GRR/SEIS, and any failure to do so would be a NEPA violation.

8. Modeling Trickery and the Changed Federal Objective Not Based on PL 101-229

PL 101-229 is the legislation that authorizes the MWD Project of which Tamiami Trail is only a component. The Tribe notes that the 2003 GRR/SEIS recognized that the federal objective was to only pass the MWD Project *design flow* of 4,000 cfs. Yet, the Draft RGRR/SEIS shows that greater than CERP D13R acre feet of water flows were used to model alternatives and assess impacts to the Trail. (Appendix D, Table 3 and Section 3.21.) This inappropriate bait and switch has resulted in this unnecessary SEIS process in which even more expensive alternatives have been analyzed. While the Tribe recognizes that the technical solution for the Tamiami Trail component needs to be compatible with the expected hydraulic conveyance of CERP, the 4,000 CFS hydraulic conveyance of PL 101-229 should be the only federal objective for MWD. The fact that greater than CERP flows were used to screen alternatives and predict impacts to the Trail is proof that the Corps continues to allow those who seek to improperly accomplish CERP under the Pre-CERP MWD Project continue to get their way with the Corps.

9. Performance Measures for Alternatives Must Include the Cost of Delay

The cost of delay that will be caused to the Miccosukee Tribal lands, and other parts of the Everglades, should have been listed as a performance measure for analyzing the alternatives in the Draft RGRR/SEIS and should be a factor in the Final RGRR/SEIS. Delay was a performance measure in Table 7 of the GRR/SEIS on the 8.5 Square Mile Area Component of the MWD Project, which estimated that about 246 acres of tree islands in WCA-3A are being lost for each year of delay of MWD and that the cost of restoration would be from $50,000 to $500,000 per acre. Thus, for each year of delay of MWD, the cost to restore tree islands lost by delay is $23-$123 million dollars a year, if they can ever even be restored. Delay of the MWD project also causes damage to Lake Okeechobee, the Caloosahatchee and St. Lucie estuaries and Everglades National Park. These cumulative impacts and indirect costs are required to be assessed by NEPA. The cost of delay that will be caused by the selection of an alternative that will delay the completion of the MWD Project should be estimated and factored into the analysis of alternatives in the Draft RGRR/SEIS.

10. The Draft RGRR/ SEIS Improperly Excludes the Engineering Report on the Design of the Bridges and Reconstruction of Roadway from the EIS

The Draft RGRR/SEIS has improperly excluded the Engineering Report on the design of the bridges and roadway reconstruction from Appendix D of the RGRR/SEIS. This is contrary to NEPA, which requires that the public be given the opportunity to comment on these important engineering reports. The Tribe contends that the Corps must release another SEIS with these documents before completing the EIS process if the bridge alternative is to be selected by the Corps.

11. Any Plan That Maximizes Environmental Outputs Without Regard to Costs Should be Rejected As Not Meeting the Project Purpose

Section 5.7.3 claims that Alternative 17, the skyway, is recognized as the plan that maximizes environmental outputs without regard to fiscal or other constraints. The faulty FWS CAR analysis also designated Alternative 17 as the environmentally preferred alternative. Yet, the FWS Draft CAR totally ignores the fact that the MWD Project will benefit 900,000 acres of wetlands and the excessive delay of this project caused by Alternative 17 would allow thousands of acres to continue to be destroyed. Certainly the selection of an alternative that meets the project purpose and will allow the expeditious completion of a project that will benefit 900,000 acres of the Everglades, such as the quick and economical culvert cleaning, is the real environmentally preferred alternative. The costly Alternative 17 would clearly fail as the environmentally preferred plan if the Corps had not improperly segmented and narrowed the scope of the MWD project and used flows greater than CERP to model alternatives.

Moreover, Alternative 17 should not have been assessed without regard to costs and the purpose of the MWD Project. Failure to have the money necessary to construct this alternative would both further delay MWD and compromise CERP, since WRDA 2000 requires that the MWD project be completed before important restoration components are funded. Under NEPA, the Corps is only required to analyze *reasonable alternatives.* This alternative is not reasonable under the MWD statutory authority and funding. The Corps admits in the RGRR/SEIS because of cost but has apparently removed its prior finding that cannot be implemented based on WRDA 2000. The Corps had no responsibility or authority to analyze such an unreasonable and unimplementable alternative. Section 902 of WRDA 1986 clearly prohibits the adoption of this alternative without authorization by Congress, as the cost is a whopping $343, 299, 369 (up from $142,156,700 in the 2003 EIS) which is more than three times the $81 million dollars that Congress initially authorized for the entire MWD project of which the Trail was a minor component. While the Draft RGRR/SEIS states at Section 5.7.5 that the $109, 760, 000 contained in the DOI Capital Assets Plan is available for Tamiami Trail, it fails to note that Congress has not authorized that funding for the Trail. The amount of funding currently available should be disclosed in the Final RGRR/SEIS.

Note: an example of the confusion caused by obfuscation are tables 24 and 25, which somehow conclude that the four mile and ten mile bridges are a cost effective best buy. This

absurd analysis is reflective of the back-door Tamiami Trail process that has been ongoing for a number of years.

C. THE DRAFT RGRR/SEIS FAILS TO COMPLY WITH THE ESA

The project area assessed under the Endangered Species Act (ESA) in the Draft RGRR/SEIS in Section 5.6.5.6 is woefully inadequate. The FWS Section 7 consultation looked at Tamiami Trail construction impacts only (See, Appendix F, August 10, 2005 letter.) The Tribe continues to contend that the area assessed under the ESA should be the entire area analyzed in the 1992 GDM/EIS on MWD. Such an analysis must include any potential adverse impacts to the endangered species on Tribal Everglades in WCA 3A, including the snail kite and the wood stork, that have been caused, and will continue to be caused, by the delay of the MWD Project. This should include the impacts of delay which has caused the IOP to be implemented, which is adversely impacting 88,300 acres per year of snail kite critical habitat as referenced in the March 2002 FWS Amended Biological Opinion. Under Alternative 14, IOP will be in place for another five years and those adverse environmental impacts must be assessed in the Final RGRR/SEIS. There has also been a 50% decline in the endangered Snail Kite population under IOP operations which is not analyzed, or even discussed, in the letter or the report. It also fails to mention that MWD completion is also vital to other threatened and endangered species, including the wood stork, snail kite, American crocodile and manatee.

D. SPECIFIC COMMENTS ON THE DRAFT RGRR/SEIS

1. Project Partners, Section 1.2: The Project Partners described in this report, SFWMD, DOI, FWS, ENP, FWC, FDOT and DERM are not all true project partners. The MWD Project is a federal responsibility. It appears that the Corps is merely using this term to disguise the fact that it has created an ad hoc advisory team, which consists of non-federal entities and consultants, to provide recommendations without complying with the Federal Advisory Committee Act (FACA).

2. Study Authority: The Tribe notes that the Corps accepted the Tribe's suggestion from the previous EIS process and provided the exact language of the law in the Draft RGRR/SEIS. Section 1 now correctly states that: *PI 101-229...authorized the Secretary of the Army to undertake certain action to improve water deliveries to ENP and shall, to the extent practicable, to restore natural hydrologic conditions...* Unfortunately, the Corps' use of a model that provides greater than CERP acre feet of water to assess impacts shows they do not intend to follow this directive of Congress.

3. Biological Opinion and Interim Flow Targets: The Tribe disagrees with the discussion of the interim flow targets from the Biological Opinion contained in section 3.3. This section fails to state that the closing of the S-12 structures was the option selected and has been going on for nearly eight years and has, and continues to be, enormously environmentally destructive to Tribal lands in WCA-3A. The Corps should not base interim flow targets on a faulty Biological Opinion that has never been subject to NEPA review, nor an Amended Biological Opinion,

which arbitrarily removed the requirement that the MWD Project be completed by December 31, 2003.

4. **Cultural Resources**: Section 5.6.5.6 of the Draft SEIS mentions the historical importance of the Coopertown Airboat rides, but again fails to mention the historical importance of the authentic Miccosukee Indian Village along old Tamiami Trail, because it claims these areas are outside the project boundary. The Tribe contends the project area is that of the MWD Project. Thus, the Village, which is an historic family camp and the cultural resources that could be impacted by this project, include the cultural resources of the Miccosukee Tribe and peoples, including the tree islands in WCA-3A and other parts of the Everglades. The Tribe also urges the Corps to ensure that access to the Osceola and Tiger Tail Camps is not impeded.

5. Tribal Lands: The Draft GRR/SEIS states at Section 7.14 that there will be no DIRECT impacts on Tribal lands. Section 5.6.14 also claims that NO TRIBAL LANDS WILL BE AFFECTED. The Tribe contends that the Corps can only make this statements because it has not conducted the analysis necessary to find any harm and because it has improperly narrowed the scope of its analysis to only the Tiger Tail and Osceola Camps. Under NEPA, the impacts on Tribal lands analyzed should include direct and indirect and cumulative impacts to both Tribal reservation and lease lands in WCA 3A, and the Miccosukee Reserved Area. These lands will all be either adversely or beneficially impacted by the selection of a Tamiami Trail alternative. The scope of the Tribal lands should be the same as it was in the 1992 GDM, and the impact of delay that would be caused by selection of certain alternatives should be quantitatively and qualitatively assessed. Also, the Tribe is concerned that the statement of no impact to the Tiger Tail and Osceola camps is also inaccurate. The Draft RGRR/SEIS has not identified precisely what impact the MWD project water levels, which now appear to have been modeled using even greater than CERP acre feet of water, will have on the Osceola Camp. It merely states that, "DOI is coordinating with the Osceola Camp to complete its raising prior to implementation of this component of MWD." Section 5.6.14. Moreover, Appendix H at 10, contains the following disconcerting statements: " Relocation of the Osceola Camp is outside the scope of the authorized Corps project. The Everglades National Park (NPS) has accepted responsibility and will make all necessary arrangements for relocation or elevation of the camp." As stated earlier, the Tribe will not accept adverse impacts on the Osceola camp or any interference with their traditional practices. The Tribe will also vigorously oppose any forced relocation of this camp, which existed long before DOI even existed. Any attempt at "Indian Removal" will not be tolerated by the Tribe.

6. Hurricane Evacuation: Section 5.3.2 discusses hurricane evacuation. The Tribe has continuously told the Corps that even though the Trail may not be a DOT hurricane evacuation route, it is the only route out for the Tribal members who live along the Trial in a hurricane. As the Miccosukee Tribal members and others in the Service Area use Tamiami Trail to travel across the Everglades, we reiterate our request that the Corps make certain that access is always maintained to protect the health and safety of both Tribal members and the public.

7. Compatibility With CERP: As stated previously, the Tribe supports the federal government's desire for compatibility with CERP in Section 5.7.8, but it must not delay the

implementation of the MWD Project. The Tribe does not believe that Alternative 14 offers that compatibility and reiterates that the two bridge Alternative 14 has a potential for political and bureaucratic mischief plus delay. The Corps apparently thinks that despite the WRDA prohibition against bridging the Trail prior to MWD completion, it is okay to bridge the Trail as long as the L-29 levee remains in place. The prohibition against bridging the Trail in WRDA 2000 makes no such distinction. This quibling is an attempt to hood wink Congress into wasting taxpayer money to build a bridge with the levee still in place. The reasonable culvert cleaning/widening alternative proposed by the Tribe would allow MWD to be expeditiously completed so that CERP decompartmentalization, including any Tamiami Trail modifications deemed necessary, could proceed. Again, the use of the NSM model of greater than CERP acre feet of water to assess impacts on the Trail is improper and attempts to fool Congress into wasting vast sums of money.

8. Socioeconomic Factors: In reference to the socioeconomic factors outlined in Section 5.6.15 it appears that the Corps has discarded the performance measure used in the previous EIS to avoid and minimize impacts to the Tiger Tail and Osceola Camps as a constraint in evaluating the alternatives. In the last EIS, the Corps had developed a performance measure to assess the impacts to the camps, including access, privacy and encroachment, both during and after the construction phase. The Tribe is concerned that the secret advisory team discarded this PM and insists that access to the camps not be impeded. The Tribe reiterates that it will not accept any adverse impacts to either the Tiger Tail or Osceola Camps and that any interference with the traditional use of these camps is non-negotiable. The Tribe will also vigorously oppose any attempt to forcibly relocate the Osceola Camp.

9. Hydraulics and Hydrology: In Section 5.3.4, the Corps also appears to have changed its requirement from Section 5 of the 2003 GRR/FEIS, that the final alternative selected need only pass MWD flows of 4,000 cfs in favor of a model that passes acre feet of water greater than CERP. This section now substitutes language concerning the L-29 canal only. The Draft RGRR/SEIS should contain a hydrological analysis of NE Shark River Slough to show whether Alternative 14 is necessary using 4,000 cfs and how the placement of the bridges was decided.

10. Costs and Section 902: Section 4.16.3 contained a $20.215 million dollar cost constraint on the Tamiami Trail component of the MWD project. The Draft RGRR/SEIS replaces this with the $109, 760, 000 contained in the DOI Capital Assets Plan. This DOI funding has not been provided by Congress and this should be so stated. The Draft RGRR/SEIS is supposed to be a full disclosure document and must include only the funding currently available as a cost constraint. The blank check mentality of DOI and the Corps continues due to the failure to comply with Section 902, which provides that the costs of MWD water can not exceed those allowed by Section 902 without going back to Congress. When the PCA was signed in 1994, the $81 million dollar project cost escalated to $114 million. The cost is now at $400 million. Additionally, even the cost of the Tamiami Trail alternatives have dramatically escalated since 2003: For instance, the cost of the skyway went from $142 million dollars to $343 million dollars. It is astounding to think that the Corps would even think of spending $343 million dollar for a mere component of MWD which was initially authorized at $81 million dollars for the

entire project. Only through the application of Section 902 will this blank check mentality of the agencies be stopped.

11. WRDA Constraint Language: Although the Draft RGRR/SEIS contains the WRDA 2000 constraint language, the selection of alternatives defies it. Section 601(b)(2) of WRDA 2000 prevents CERP components from being funded until the MWD Project is completed. Despite this Congressional mandate, the Corps refuses to recognize that it is incumbent on them to select an alternative that is within the funding constraints and statutory authority of PL 101-229, so that the MWD Project can be completed expeditiously. The Corps and/or DOI does not have the funding for Alternative 14. Moreover, the Corps appears to incorrectly think that raising and bridging Tamiami Trail is not contrary to WRDA 2000, as long as the L-29 levee is not removed. This "quibling" is dangerous and will not bode well with Congress if they discover they are funding the raising and bridging that WRDA 2000 prohibits. Moreover, they will be even more incensed to learn that the Corps is wasting precious tax dollars by constructing white elephant bridges that will do little for flow with the levee still in place.

12. Betterments: The Draft RGRR/SEIS finds that betterments to protect and enhance wildlife are not part of the project purpose. The Tribe urges the Corps to make certain that any DOI or SFWMD decision to incorporate them not delay MWD.

13. Flood Damage to Road: Section 4.3 raises concerns about saturation and overtopping of the road but fails to contain an analysis using 4,000 cfs that shows that this would happen. Instead, the Corps and DOI have used N.S.M. modeling that provide acre feet of water that are even greater than those authorized for CERP. (Appendix D, Table 3.) The Tribe believes that a proper analysis that uses 4,000 cfs to model impacts, along with the cleaning, widening and placement of additional culverts as necessary, would provide such flows as are "practicable" and would allow MWD to be completed and CERP to move forward. The Tribe has consistently supported only such infrastructure as is necessary for the Tamiami Trail component of the MWD Project, but has also emphasized that Tribal and public safety are of the utmost importance and must be protected both during and after construction. It should be noted that Section 3.4 states that water would begin overtopping the highway at an event frequency of between 200 and 500 years, which is well above the 100 year frequency that is usually the design basis. Finally, this section also states that Tamiami Trail is currently in need of maintenance, which is not a federal responsibility but a state responsibility. This state maintenance could be combined with the federal government's selection of the culvert clearing/widening alternative to reduce the cost and delay of the project

14. No Schedule or Project Implementation Date: The Draft RGRR/SEIS contains no schedule for completion for Alternative 14. The 2003 Final GRR/SEIS which stated in Section 6.12 states that the duration of the construction of the Plan would be 24 months. The Tribe contends that the date the project could be completed should have been a factor in screening alternatives and must be included in the Final EIS. Under Project Implementation in Section 6.10, the document states that "If the Tenatively selected Plan is approved, design and construction would be completed approximately four years following the Record of Decision.

Thus, there is no project completion date! A prolonged EIS process could cause the project to be delayed indefinitely even beyond the new delayed December 2010 completion date.

15. Transportation: In reference to Section 5, although the Draft RGRR/SEIS states that Tamiami Trail will continue to be accessible during storms and hurricanes under the proposed Alternative 14, the Tribe reiterates that the Corps must take all precautions that both transportation and the safety of the Tribe and the public not be compromised during, or after, construction.

16. Impact on Tribal Lands: The statement in Sections 7.14 and 5.6.14 that no tribal lands would be affected and that there will be no direct impacts of any alternatives on Tribal lands is not supported by evidence in the record. The Draft RGRR/SEIS fails to assess the indirect and secondary and cumulative impacts to Tribal lands that all bridge alternatives would have by delaying the MWD project will continue to have on Tribal Everglades in WCA 3A. Moreover, the use of greater than CERP flows must also be analyzed for impacts to the Tiger Tail and Osceola Camps. An analysis of the impacts these flows will have on the MRA and other Tribal properties must also be conducted.

17. Impact on Businesses: The Draft RGRR/SEIS does not adequately assess the impact that would be caused to Tribal businesses by any alternative that delayed MWD or provided greater than CERP acre feet of water. Nor does this section adequately assess the potential impacts that construction activities will have on the Miccosukee Resort and Gaming Facility, and the Tribe's Miccosukee Indian Village, Airboats, Restaurant, and Gas Station whose customers use Tamiami Trail.

18. Osceola Camp: It appears that the Corps has removed the analysis of impacts to the Osceola Camp as a Performance Measure. Without such a PM, the Tribe is concerned that the statement of no impact to the Osceola Camp may be inaccurate. The Draft RGRR/SEIS does not analyze the impact that providing the greater than CERP acre feet of water, as used in the modeling, will have on the Osceola Camp and wants this analyzed in the Final RGRR/SEIS. It merely states that "DOI is coordinating with the Osceola Camp to complete its raising prior to implementation of this component of MWD." Section 5.6.14. The Real Estate Appendix H at 10, contains the following disconcerting statements: " Relocation of the Osceola Camp is outside the scope of the authorized Corps project. The Everglades National Park (NPS) has accepted responsibility and will make all necessary arrangements for relocation or elevation of the camp." As stated earlier, the Tribe will not accept adverse impacts on the Osceola camp, or any interference with their traditional practices. The Tribe will also vigorously oppose any attempt to forcibly relocate this Camp.

19. Tiger Tail Camp: It appears that the Corps has removed the analysis of impacts to the Tiger Tail Camp as a Performance Measure. Without such a PM, the Tribe is concerned that the statement of no impact to the Tiger Tail camp is inaccurate. The Draft RGRR/SEIS has not identified precisely what impact providing greater than CERP acre feet of water, as used in the modeling, will have on the Tiger Tail Camp and wants the Corps to analyze this in the Final RGRR/SEIS. As stated earlier, the Tribe will not accept adverse impacts on the Tiger Tail Camp,

or any interference with their traditional practices. The Tribe will oppose any plan that has adverse impacts on the Tiger Tail Camp.

20. Environmental Justice: Section 5.6.18 claims, without the requisite analysis, that no long term impacts would be created for the residents of the Tiger Tail and Osceola Camps. The Tribe is concerned that the advisory team has removed the previous Performance Measure that would allow them to analyze the potential adverse impacts of alternatives on the Tiger Tail and Osceola Camps. The Tribe contends that the Corps must ensure that the project is not likely to affect the environmental health or safety, and traditional way of life, of either the Tiger Tail or Osceola Camps. Moreover, the statement about "relocation" of the Osceola Camp contained in Appendix H is reminiscent of the deplorable practice of Indian Removal, contrary to environmental justice, and should be removed from any further consideration and this document. The Tribe also continues to contend that the disparate impacts to Tribal Everglades and its culture and way of life due to the failure to implement the MWD Project, should also be analyzed in this section. Any alternative that delays this project should be identified as adversely and disproportionately impacting the Miccosukee Tribe of Indians.

21. Public Involvement: Section 9.1 claims that the Corps complied with USACE and NEPA policies and sought public input. In reality, the process conducted by the Corps was a secretive back door process which excluded the public. An ad hoc advisory group, which did not comply with FACA, met in private and invited the public in after the decisions were made to feign "public involvement." This is contrary to both FACA and NEPA.

22. Public Agency Meetings: This section contains a misleading statement about the Miccosukee Tribe which we have asked to have removed in the prior process.
It fails to acknowledge that the Tribe ultimately rejected the *skyway* in its comments on the prior Draft and Final EIS and continues to do so, because it would delay the completion of the MWD Project. The Tribe does not understand why the Corps stubbornly insists on contending that this is still the Tribe's position, when the Tribe, a sovereign government, has asked that this be corrected numerous times. The Tribe once again requests that the Corps state its position accurately in this section.

23. Water Quality: Section 2.3 purports to analyze water quality of the project. In the prior EIS process, the Tribe contended that its unanalyzed culvert alternative would allow any traffic runoff to continue to be treated at the shoulder. Section 2.2 discusses the massive S-9 pump, which discharges water to the Everglades and the Park under MWD. This section should contain an analysis of the pollutants that will have to be cleaned up from these S-9 discharges before the project is implemented.

24. Natural System Model: Section 3.2.1 shows that an Natural System Model (NSM) which uses greater acre feet than CERP D13R was improperly used to predict water levels in WCA 3B and the L-29 canal and to determine the potential impacts to Tamiami Trail. The Tribe contends that it was improper to use NSM 4.6.2 to determine Tamiami Trail modifications and that this has resulted in unnecessary and expensive alternatives being analyzed and selected. Appendix H states this model run was chosen because it represents stage and duration target for the Greater

Everglades System, but fails to acknowledge these targets are for CERP and not for MWD. While this appendix claims that using this NSM model is prudent, the Tribe believes it is unauthorized and has resulted in the selection of an unnecessary and expensive alternative that would not be required if proper MWD modeling that passed 4,000 cfs MWD flows was used. (Note: Appendix H admits the current system has the hydraulic capacity to pass MWD flows and provides a hydraulic connection to the sloughs.)

25. Safety: As stated throughout these comments, the Tribe insists that both Tribal and public health and safety be strictly maintained both during, and after, construction of the Tamiami Trail modifications. The Tribe contends that if the Corps had not allowed modeling to be used that incorporates greater than CERP acre feet of water on a project that only needs to pass 4,000 cfs, the current system would be able to pass flows to the extent practicable and safety would not be an issue.

26. Tamiami Trail List of Preparers: NEPA requires an EIS to be a full disclosure document. The Tribe disputes that the list of preparers at page 145 is the full list of people who contributed to this document. NEPA requires this document to include the name of the advisory team and anybody else who worked on the Draft RGRR/SEIS.

E. THE CORPS' DID NOT MEET ITS TRUST RESPONSIBILITY TO THE MICCOSUKEE TRIBE IN THE DRAFT RGRR/SEIS PROCESS

The RGRR/SEIS process was not consistent with the Corps' trust responsibility to the Tribe. The Tribe was asked to attend "interagency meetings" in the prior Tamiami Trail EIS process, which it insisted be public meetings. This time, despite the fact that the Tribe directly asked the Corps to be included in the process, it was excluded from the meetings which were secretly held without both the Tribe and the public. The Tribe only found out about these meetings, which discussed matters that had a direct impact on the Tribe and its natural resources, when documents prepared for the meetings were somehow released. This is not only discouraging, it is also contrary to the Corps' Trust responsibility to the Tribe. The Corps has a duty to conduct meaningful pre-decisional consultation. The Corps also has a solemn trust responsibility to choose a plan that will protect Tribal natural resources and trust resources and should reject any alternative that will cause further destruction of Tribal lands.

III. CONCLUSION

The Tamiami Trail modifications selected must be consistent with the Project Purpose in PL 101-229, WRDA 2000 language, and the Corps' trust responsibility to the Miccosukee Tribe. The review process must select a plan that meets the project purpose, and that will allow the expeditious completion of the MWD Project that will benefit 900,000 acres of the Everglades. The Tribe believes that Alternative 14 is expensive and unnecessary to pass MWD flows. The Tribe urges the Corps to resist political pressure from those who refuse to abide by the purpose and authority of MWD and urge it to embrace an unwise plan that causes further delay to the detriment of the Everglades.

The MWD Project is not CERP. It was intended to be an interim restoration project designed to protect and preserve 900,000 acres of Everglades wetlands, including hundreds of thousands of acres of Tribal Everglades in WCA 3A. The Tribe urges the Corps to abide by its Trust responsibility and select a Tamiami Trail modification, such as the cleaning and widening of culverts, and possible construction of new ones, that would allow the MWD Project to be constructed expeditiously. The culture and way of life of the Miccosukee Tribe of Indians, and the future of the Everglades, and its restoration as directed by WRDA 2000, depends on it.

Sincerely,

Dexter W. Lehtinen

cc: Chairman Billy Cypress

example email comment on TTM final

From: Fumiko Sakoda [wolffirst@hotmail.com]
Sent: Tuesday, January 10, 2006 12:43 AM
To: TTMComments SAJ
Subject: Tamiami Trail

Dear Mr. Appelbaum,

I am concerned about the restoration of Everglades National Park. Choosing the 11-mile Tamiami Trail skyway option, or at least a single section of bridging that could be further built upon by another project, will help restore water flow through America's Everglades. The current alternative--2- and 1-mile bridge sections for the Modified Water Deliveries to Everglades National Park-Tamiami Trail Project--does not go far enough to restore significant water flow through the park to Florida Bay.

Modifying Tamiami Trail is one of the most important elements of Everglades restoration, and should be given the highest priority. Without a change in the proposed plan, the Everglades will not achieve the highest level of protection that the American public expects.

The skyway provides significantly more benefits than any other plan and it's worth the expense to do the work the right way the first time. I urge the Corps to take a proactive step to restore natural water flow to Everglades National Park and Florida Bay and choose the skyway.

Thank you for your consideration.

Sincerely,

Fumiko Sakoda
P.O. Box 104
Rosston, OK 73855

Draft Responses to the
Letters of Comment on the
Final RGRR/SEIS
Tamiami Trail

The following draft responses to the comments on the Final RGRR/SEIS for Tamiami Trail were current as of 20 January 2006. Final responses are in preparation.

Commenter	Comment	Synopsized Comment		
See List #1 and List #2	1	I am concerned about the restoration of Everglades National Park. Choosing the 11-mile Tamiami Trail skyway option, or at least a single section of bridging that could be further built upon by another project, will help restore water flow through America's Everglades. The current alternative--2- and 1-mile bridge sections for the Modified Water Deliveries to Everglades National Park-Tamiami Trail Project--does not go far enough to restore significant water flow through the park to Florida Bay.		JDM: All of the alternative bridge plans have sufficient conveyance capacity to restore the entirety of expected future MWD flows through the Park. They differ only in the distribution of flows across NESRS.
	2	Modifying Tamiami Trail is one of the most important elements of Everglades restoration, and should be given the highest priority. Without a change in the proposed plan, the Everglades will not achieve the highest level of protection that the American public expects.		NR
	3	The skyway provides significantly more benefits than any other plan and it's worth the expense to do the work the right way the first time. I urge the Corps to take a proactive step to restore natural water flow to Everglades National Park and Florida Bay and choose the skyway.		JDM: The cost of the 10.7-mile bridge ("Skyway") exceeds the budgeted funding for the project.
Cindy Snyder		Same as List #1 comments adding only the following:		NR
	1	Taxpayers and Florida citizens are spending billions of dollars to restore the Everglades. It must be done right, or it will be our nation's most expensive environmental failure.		JDM: The cost of the 10.7-mile bridge ("Skyway") exceeds the budgeted funding for the project.
Sarah Linney		Same as List #1 comments adding only the following:		NR
	1	Besides restoring historic waterflow across the Florida Bay, and elevated road will also remove the danger of cars and wildlife such as Brown Bears, White-tailed Deer, and the endangered Florida Panther from hitting each other. These animals are all large enough to cause an accident.		JDM: There are no records of vehicle collisions with large animals. If this became a significant safety issue, it could be more economically addressed with roadside barriers such as used along portions of Alligator Alley.
Bill Parker	1	...I am concerned about the restoration of Everglades National Park. The Tamiami Trail, as I am sure you know, is a road that in essence acts as a dam. This dam is a major barrier to the natural water flow, and its presence continues to impede restoration of the Everglades. Modifying the Tamiami Trail is one of the most important elelments of Everglades restoration, and consequently should be given the highest priority. Without a change in the proposed plan, the Everglades will not achieve the highest level of protection that the American public expects.		NR
	2	The current alternative, as I understand, is 2 and 1 mile bridge sections for the Modified Water Deliveries to Everglades National Park. This Tamiami Trail Project simply does not go far enough to restore a significant water flow through the park to Florida Bay.		JDM: The recommended plan provides for full MWD restoration flows through the Park.
	3	Choosing the 11-mile Tamiami Trail skyway option, or at least a single section of bridging that could be further built upon by another project, will help restore water flow through America's Everglades.		JDM: The recommended plan provides for full MWD restoration flows through the Park.
David Addison	1	As a very concerned American citizen, I strongly urge you to choose the 11-mile Tamiami Trail skyway option as the only sensible course of action. From your well acknowledged and rightfully praised experience, you are fully aware of the damages already caused by the damming effects of the too long established US highway 41 in this specific area. In order to correctly improve and restore the Everglades National Park to a semblance of its natural well-being, and to contribute to the established renovation project which Florida Governor Jeb Bush described over three years ago, this 11-mile stretch will be beneficial to all.		NR
Michael Matthews	1	It is imperative that the Army Corps of Engineers go with the 11-mile bridge (the "skyway") option in its plans for modifications to the Tamiami Trail (US highway 41). This highway cuts through Shark River Slough, one of the Everglades' deepest and most important water passageways and this 11-mile section of the 1928 road must be elevated into a "skyway" if Everglades restoration is to succeed. The skyway will be an important first step in returning the historic water sheet flow through parched Everglades National Park and into Florida Bay. It will be beneficial to wildlife by reducing habitat fragmentation and preventing road kill. The project will create jobs and increase tourism while raising Everglades awareness at the same time. An 11-mile skyway will serve as a visible symbol of Everglades restoration. Finally, the Everglades Expansion and Protection Act states that the MWD Project features (of which this is one) are "justified by the environmental benefits to be derived the Everglades ecosystem in general and by the park in particular an shall not require further economic justification...".		JDM: The 10.7-mile bridge alternative could not be recommended because its cost exceeded the available budget for the MWD project. Economic justification was not a consideration.

	1 cont ...	... If this is true, then the 11-mile skyway—the environmentally preferred option—should be selected as the plan to go with, not what the Miami Herald has dubbed a "$125 million two-bridge patch-up".		
Brian McMahon	1	I agree Alternative 14 seems to be the best plan. It allows adequate water flow, and has the highest benefit per dollar ratio. It also preserves traditional and cultural uses for the Indians and recreational users. Maintaining public access should be a high priority in all Mod Waters and CERP planning. Alternative 14 is a step in the right direction.		NR
M. Raines	1	I am gravely concerned about the restoration of Everglades National Park. Please make Tamiami a bridge--a skyway. We must preserve this national treasure. The planet is about more than us having a fast, convenient way to find another Wal-Mart or Radio Shack. Building the bridge will make both people and nature happy.		NR
Beth Franks	1	The idea of restoring Everglades National Park to "increase the level of protection of [its] outstanding natural values...and to enhance and restore the ecological values, natural hydrologic conditions" is very exciting. But I am concerned about the plan itself. I understand Tamiami Trail, a road that currently acts as a dam, is a major barrier to the natural water flow, and its presence continues to impede restoration of the Everglades. Does the current plan of building one- and two-mile bridge sections for the Modified Water Deliveries to Everglades National Park-Tamiami Trail go far enough to restore significant water flow through the park to Florida Bay? Experts are saying "No." An alternative, the 11-mile Tamiami Trail skyway option--or at least a single section of bridging that could be further built upon by another project--will help restore water flow through America's Everglades. Modifying Tamiami Trail is one of the most important elements of Everglades restoration, and should be given the highest priority. Without a change in the proposed plan, the Everglades will not achieve the level of protection that the American public expects.		JDM: The recommended plan goes all the way in restoring water flows through the Park. The major difference between it and the 10.7-mile bridge is the distribution of flows across NESRS.
Robert Stagman	1	Truly effective restoration of Everglades National Park is one of the most important environmental projects on our national agenda. Only the 11-mile Tamiami Trail skyway option will allow the water flow needed to restore America's Everglades. The alternative 2- and 1-mile bridge sections for the Modified Water Deliveries to Everglades National Park-Tamiami Trail Project are inadequate to restore significant water flow through the park to Florida Bay. The skyway is so superior to any other plan that the expense is fully justified. I urge the Corps to enact the plan required to finally restore natural water flow to Everglades National Park and Florida Bay by choosing the skyway alternative.		JDM: The recommended plan is equally adequate to restore significant water flow through the Park as the 10.7-mile bridge plan. The latter could not be recommended because of insufficient availability of funds, not justification.
George & Frances Alderson	1	Everglades National Park is a national treasure, and the restoration of water flow is long overdue. It is needed to sustain the Everglades and its wildlife. I (George) have visited the park and got a good grasp of its setting in south Florida, including the Tamiami Trail as an obstacle to the flow of water. Restoration of the water will not be achieved if you adopt the inadequate proposal of piecemeal bridge sections no more than 1 or 2 miles in length. That is simply not adequate. We feel a more aggressive option should be selected: a skyway of 11 miles. Alternatively, a skyway section of several miles would help bring more water through, and this could be extended by future construction projects.		JDM: A 10.7-mile bridge would not bring more water through than the recommended plan. It would just distribute it differently across NESRS.
Spence	1	The massive plan for the Tamiami Trail which has been in place since 1926 doesn't make that much sense. The Glades surrived and in the early 60's was a paridise of birds and animals.What is destroying the Glades is the Army corp. and the Fla, water mangement dept allowing the issuance of permits for the continued sprawls. The expense of the Tamiami project would be out of this world and as long as Alligator Alley has dammed the flow of the river of grass what is the benefit?		JDM: A major factor in the ecological decline in the Everglades was the construction of the water impoundment areas north of Tamiami Trail culminating in the 1960s. The MWD project, of which Tamiami Trail is a part, will address this problem, as will the follow-on CERP projects.

Florida Power and Light, Florette Braun	1	Dear Mr. Moulding: FPL would like to reiterate our earlier comments noting that we have a distribution line running along the length of Tamiami Trail within your proposed project. This critical line serves the Indian Reservation. The line will need to be relocated and/or modified to accommodate the Tamiami Trail project, but it can not be taken out of service for any length of time. An alternate location will need to be provided for this line and the new facility will need to be constructed and in service before the existing line can be removed. If the new line is to be designed into the new bridge you will need to accommodate attachments and built-in manholes into the proposed bridges. In order to minimize impacts to both the government and FPL it will be important to involve FPL in early review of plans for the bridges and elevated roadways. In this manner creative opportunities and solutions can be identified and costly impacts recognized and minimized. Florida Power and Light will need at least one year's notice before the start of the project in order to provide time for cost estimation, budgeting, planning and relocation work.		JDM: The referenced distribution line is located on the L-29 levee, and as such , is not within the project impact area and will not need to be relocated. However, there are service taps off this line extending across the Tamiami Canal to service businesses on the south side of the highway. Some of these will be affected where they cross one of the proposed bridges. This will be coordinated with FPL in advance of construction.
	1 cont ...	...A contract agreement will also be needed to perform the distribution work. In addition, this proposed work appears to cross a currently open FPL transmission line right-of-way where future facilities are to be located. Should the proposed project impact this right-of-way an agreement will need to be reached with FPL to address additional engineering and construction costs that may be incurred to accommodate bridges or elevated roadways within the right-of-way.		JDM: The referenced FPL ROW is not within the footprint of the eastern bridge. The ROW may need to be expanded south a few feet to accommodate a slight southerly shift in the road centerline. Any change in the existing ROW agreement would need to be coordinated with FDOT.
Miccosukee Tribe - Dexter Lehtinen, Lehtinen, Vargas & Riedi, PA 7700 N. Kendall Drive, Suite 303 Miami, FL 33156	1	The Corps is well aware that when Congress passed WRDA 2000, it specifically required completion of the MWD Project prior to authorization of the CERP Decompartmentalization Project. WRDA 2000 mandates: "No appropriation shall be made to construct the Water Conservation Area 3 Decomp. and Sheetflow Enhancement Project (including...Raise and Bridge East Portion of Tamiami Trail...) until the completion of the project to improve water deliveries to ENP authorized by section 104 of the ENP Protection Act of 1989." Congress clearly prohibited exactly what the Park and Corps are now attempting to do. Building Tamiami Trail bridges as part of MWD will not stand up to a legal challenge.		The 1989 Everglades National Park Protection and Expansion Act authorized the Secretary of the Army to improve water deliveries to the Park and restore natural hydrological conditions to the extent practicable. The Act did not prohibit the construction of bridges on Tamiami Trail as part of any recommended plan. BRIAN (BARB) We do not think the currently proposed alternative violates the constraints imposed under the Water Resources Development Act of 2000 ("WRDA 2000"). The description of the CERP Decompartmentalization project in the Central and Southern Florida Restudy is quite different from the 2 bridge alternative proposed here; it includes removal of additional levees, blockage of a major canal and other actions that cannot be accomplished at this time.
	2	The Tribe is disappointed that the Final RGRR/SEIS continues to fail to analyze the resonable alternative of clearing, enlarging and if necessary, constructing some additional culverts to allow the maximum projected flow of MWD of 4,000 cfs through Tamiami Trail. Under the 1989 Act which authorized MWD, the Secretary of the Army was only authorized to restore natural hydrologic conditions to the extent practicable. Thus, spending almost double the cost of the initially authorized cost of the enitre project for a minor componenet is clearly not "practicable," especially when App. D, Annex A shows that the current culvert system has the hydraulic capacity to pass the 4,000 cfs maximum projected flow. Perhaps that is the reason that the Corps fails to emphasize the 4,000 cfs contained in the Final GRR/SEIS dated December 2003 in the 2005 Final RGRR/SEIS.		TRENT **(BARB):** This comment was addressed in the comment/response Appendix of the Draft Report. We did analyze simply clearing and adding culverts. In fact, culvert cleaning has already been tried. The problem with this alternative is that it constricts flow under the Trail, causing water to rise in the L-29 borrow canal to the North. This would damage the road structure, as well as leading to scour under the culverts and continue the deposition of fans of sediment south of the road. **TRENT:** The Corps of Engineers does not concur that clearing, enlarging and if necessary, constructing some additional culverts will allow to the extent practicable the restoration of the natural hydrologic conditions within ENP. Appendix D Annex A Section 3 clarifies the COE's position that the culverts are not adequate. Figure 18, in Appendix D Annex A (Stage Differential between the L-29BC and Downstream Marsh), shows the impacts that different openings have to the stage in the L-29BC. (response continued below)

				(continuation of response) Openings ranged from the existing condition (current culvert configuration) to the 10.7 mile bridge. What this analysis shows is that to pass the same amount of water as the recommended plan, culverts only would result in a stage approximately 1 foot higher. The increased stage in the L-29BC would raise the Design High Water for the Tamiami Trail roadway design by an additional foot. With another foot of roadway elevation the foundation of the embankment might not be able to carry this additional load without total reconstruction, potentially further delaying this project.
	3	into believing this expensive white elephant is necessary under MWD. Although the projected MWD maximum flow is 4,000 cfs, the advisory group utilized by the Corps improperly used NSM 4.6.2 modeling which provides a volume of water greater than CERP to model alternatives and justify the bridge (i.e. 1372 acre feet of water is far more than the 921 acre feet of water authorized for CERP D13R in the Yellow Book adopted by Congress.) (Section 3.2 and Appendix D, Annex A, Table 3; *See*, Table 3 attached as Tribe's Exhibit A.) Clearly, the two bridge Recommended Plan is not necessary to pass MWD predicted flows, and Congress and the public are being asked to provide a huge sum of money to build an unnecessary two bridge alternative that could prejudge the ultimate CERP solution for Tamiami Trail. It will also delay the implementation of MWD causing continued destruction of the priceless Everglades.		TRENT (Barb) The Corps did not use an advisory group. The technical design group consisted of all federal and state government agency representatives assigned to the project. The only "ad-hoc" aspect of the meetings was that they began on a request from Everglades National Park based on their belief that new scientific papers provided support for better spreading the flow across Tamiami Trail. Since this report is final and is expected to be approved very soon, the comments on delay of the project do not appear. **TRENT:** The MWD project is not authorized a specific flowrate but to the extent practicable to take steps to restore the natural hydrological conditions within the park. The Tamiami Trail report used the predicted flows from Alternative 2 of the Combined Structural and Operational Study for the comparison of bridge alternatives not the Natural System Model (NSM). The NSM model was used (see Appendix D Annex A Section 6) however for the design of the Roadway Design High Water (DHW) and the Bridge Control Water Elevation (CWE), see Appendix D Annex A Sections 9 and 1
	4	The Tribe contends that the Hydrology and Hydraulics Report (Annex A) also shows that the inexpensive alternative of cleaning the existing culverts, and adding a few more where necessary, would allow MWD to move forward expeditiously so that we can move forward toward CERP. The Final RGRR/FEIS admits that the culverts under Tamiami Trail have the capacity to convey the MWD required volume of water of 4,000 cfs. Id. at ¶ 3 and Table 2). The Corps also admits in response to the Tribe's comments that the Hydrology and Hydraulics Report "demonstrates that the current culverts do have the capacity to move large volumes of water." (Appendix L, Page 37 at Comment 25.) Yet, rather than choose the simple and inexpensive culvert		TRENT: The COE does not concur with this statement. Cleaning out the culverts and possibly adding a few more culverts does not allow us to change the current Design High Water elevation for this portion of Tamiami Trail. Correspondence from the FDOT states that the DHW is elevation 7.5 feet. Any level above this elevation causes an increased deterioration of the driving surface. Without making modifications to the Tamiami Trail roadway this stage cannot be changed and increased flows to North East Shark River Slough (ENP) cannot be delivered.

	5	The modeling chicanery used in the Final RGRR/SEIS shows that the Park, not happy with MWD design volumes, has succeeded in getting the Corps to use a model that uses far more acre feet of water than Congress has even authorized for CERP to select the Tamiami Trail alternative.		TRENT: The COE does not concur with the statement. The COE uncertain of the recommended plan from the CSOP study, which is studying combining the Modified Water Deliveries (MWD) Project and the C-111 Project operations in a comprehensive manner to enhance water deliveries to ENP while maintaining the other authorized purposes of both projects, used the Natural System Model for the selection of the new Design High Water elevation for the reconstructed embankment. This model run was chosen because it represents our restoration stage and duration targets for the Greater Everglades System. To the extent practicable it was the COE charge from PL 101-229 to restore the natural hydrological conditions within the park. The selection of the DHW for the roadway reconstruction was fully coordinated with the FDOT, whose charge is the public safety of people traveling along this roadway. (response continued below)
				(continuation of response) To compare the different alternatives lengths, locations, and ability to convey water into North East Shark River Slough an RMA-2 analysis was performed. The boundary conditions for this model run were taken from the CSOP study Alternative 2 (West Bookend Run). Alternative 2 (West Bookend Run) was chosen because it was the most environmentally aggressive plan that put the largest volume of water into North East Shark River Slough. All variables within the model were held constant (flows, stages, roughness values, etc.) accept the length and location of the bridge opening. In this manner each alternative could be compared in an equal manner on its ability to restore the natural hydrologic conditions within ENP.
	6	The Tribe is also distrubed that the Corps continues to refuse to calculate the costs, both economic and environmental, that have occurred to the Everglades as a result of the delay of the MWD...Despite this, the Corps allowed an ad hoc advisory group to meet in secret and removed performance measures that had been derived in previous public meetings that would have looked at impacts and benefits to the Tribes's lands in WCA 3A.		BRAD (BARB) It would not make sense to calculate the cost of a project that is not yet authorized. The 2003 final RGRR/EIS proposed a plan that was not authorized for construction, therefore, we cannot discuss "delays" in implementing a plan that was not approved. The meetings of the technical evaluation team were not secret; but they were not public meetings. FACA does not apply as the staffers who met were all employees of Federal or State agencies assigned to the project.
		SPECIFIC COMMENTS ON THE FINAL RGRR/SEIS		
		A. ...Using Modeling Chicanery to Exceed Authority		
	7	even for CERP to justify bridging Tamiami Trail under MWD. Buried in a separate volume in Appendix D, Annex A, technical information not contained in Volume 1 shows that NSM Model Version 4.62, which provides 1372 acre feet of water greater than the 921 acre feet of water authorized under CERP, was used to assess impacts of alternatives on Tamiami Trail. (Appendix D, Annex A, page 4, ¶ 6 and Table 3; Section 3.21.) While the Hydrology and Hydraulics Report says this model run was chosen because it represents stage and duration target for the Greater Everglades System, it should be remembered that MWD was never intended to produce CERP volumes of water, let alone those that exceed CERP. Id. at Page 4, ¶ 6.		TRENT: See response to comment 5.

	8	authorization, based on the future CERP which may never be authorized or built. While the Corps is quick to use Department of Transportation ("DOT") safety concerns as an excuse for reiniating the Tamiami Trail process and choosing such an expensive fix, a review of Appendix D, Annex B shows that DOT was kept in the dark about the modeling assumptions used for many years. A March 22, 2004 letter from DOT to the Corps in Annex B shows that it had requested information on hydrologic modeling assumptions used by the Corps as early as September 29, 2000, but that this modeling information had not even been provided as late as March 5, 2004. Thus, it appears that the only modeling assumptions ever provided to DOT, if they ever were, used NSM 4.6.2 modeling assumptions with water volumes far in excess of what MWD would provide.		Hydrologic modeling information was never intentionally withheld from FDOT District 6. In Nov 04, modeling background and results were shared with District 6, followed by a Jul 05 workshop, in which District 6 staff received an in-person explanation of the NSM modeling performed.
		B. An Ad Hoc Advisory Team, Which Failed to Comply with FACA, Made Recommendations on Plan & Bridge Placement		BARB. The team was exempt from FACA and was not an advisory team. It was a working technical team made up of representatives from government agencies assigned to the Mod Waters project.
	9	Final RGRR/SEIS. While the Corps attempts to paint this advisory group as a fact finding team, it is clear that it made policy recommendations and that the Corps improperly delegated their statutory authority to them. This advisory group not only deleted performance measures from the prior EIS process that had been devised in public meetings, it also created new ones, and revised and changed objectives of the project itself. Id. at page 3. Moreover, contrary to the National Environmental Policy Act ("NEPA"), the group failed to analyze all reasonable alternatives for Tamiami Trail. Thus, the Final RGRR/SEIS fails to analyze the viable culvert alternative. Instead,		The Corps complied with the Federal Advisory Committee Act. (Barb): Corps members were the core of this working team: no delegation of decisions was made. All team members reported directly to decision makers in the involved agencies. The recommended alternative was approved by the participating agencies. Deletion of preliminary performance measures is common when they result in ambiguous results or do not help to choose among alternatives. In any case performance measures are developed by a technical team, not by public vote.
	10	topographic maps or satellite images. It would be logical and prudent to place the longer bridge in the east, so that it passes larger quantities of waters along historic flow lines. The current proposed location for the western bridge could force water to flow to the southeast, in an unnatural way, until it intersects the historic flow path and turns back to the southwest.		TRENT: Appendix F Draft Tamiami Trail Alternative Optimization Report pages x though xiii prepared by the Everglades National Park describes the reasoning behind the placement of bridges.
	11	In addition, the proposed location for the Recommended Plan forces the water to circumvent a good portion of NE Shark River Slough, thus losing restoration benefits and wasting the tens of millions of dollars spent to forcibly buy out many residences in the 8.5 Square Mile Area allegedly to permit the raising of water in this area. Placing the larger bridge to the east would also help abate any impacts to the Tiger Tail and Osceola Indian Camps, which is a Tribe priority. The Final RGRR/SEIS fails to conduct a modeling analysis of how the Recommended Plan would impact the Miccosukee Reserve Area (MRA). With the entire L-67 Extension removed, and most of the water being released much closer to the MRA, one can logically expect that water levels around and/or in the MRA will increase, thus potentially creating flooding problems for the Tribe. This was not analyzed in the Final RGRR/SEIS.		TRENT: The L-67Extension currently acts as a buffer preventing discharges from the S-12's from flowing towards the east and creates two distinct stages east and west of the levee with the west side higher. With the implementation of the Modified Water Deliveries project and the removal of the L-67 Extension a larger portion of flows will be distributed east of the levee location and away from the Miccosukee Reserve Area (MRA). The target flow volume split between east and west is 55/45, respectively.
		C. Final RGRR/SEIS Fails to Comply with NEPA		
	12	Contrary to the conclusion in Section 1.4, the Tribe contends the Final RGRR/SEIS fails to comply with the National Environmental Policy Act ("NEPA"). The Tribe contends that the Corps has improperly segmented the MWD Project into separate components, such as the 8.5 Square Mile Area, Tamiami Trail, and Seepage Control components, contrary to the National Environmental Policy Act (NEPA). The 1992 General Design Memorandum ("GDM") and EIS		JDM: Do not concur. This is a comment on process, not a substantive one on the EIS that would need to be addressed in the document.
	13	*of action shall be evaluated in a single impact statement.* When the Corps prepared its GDM for the MWD Project in 1992, it evaluated all aspects of this interrelated project in a single EIS. This improper segmentation has caused the Final RGRR/SEIS to fail to adequately assess impacts on Tribal lands and resources. Finally, contrary to NEPA, the Corps did not respond to the Tribe's comments on this improper segmentation in the Final RGRR/SEIS.		JDM: Do not concur. This is a comment on process, not a substantive one on the EIS content that would need to be addressed in the document.

	14	The narrow purpose and scope in Section 1.3 of the Final RGRR/SEIS allows the impacts of delay, especially those to the Tribal lands in WCA-3A, to remain unassessed and skews the analysis of the alternatives. Due to the failure of the Corps to broaden the study area, and consider the serious environmental harm being caused by the failure to complete MWD, the Final RGRR/SEIS omits issues of vital importance, such as the impact of the project and project delays on Tribal Everglades and the endangered and threatened species that inhabit these areas. The Corps has admitted in the Final GRR/SEIS on the 8.5 Square Mile Area component of the MWD project that *the loss of tree islands has an impact on critical habitats and cultural resources in WCA 3A, delayed implementation of the MWD project will cause an estimated loss of 8.4 islands and 246 acres per year at an estimated cost of $50,000 to $500, 000 per acre.* (Final GRR/SEIS on the 8.5 Square Mile Area, Section 5.2.7, page 64 and Table 7.) In light of the serious environmental and economic costs of delay, the Corps's excuse in the Final RGRR/SEIS Appendix L at Comment 29 that "the true ecological costs of delay can not be determined" (so they didn't do it), is belied by the fact that they have done it before. Placing the blame for delay on CSOP shows how little the person answering the Tribe's comments knows about the MWD Project, which is part of CSOP.		JDM: The previous response is still relevant. The ecological cost of delay for one particular year would be dependent on the specific meteorological conditions that year. The alternative plan the Tribe proposes would likely take only one year less to constuct. It is not possible to quantify in any meaningful way what the ecological cost of the additional year would be. Furthermore, there will be no significant flooding relief in the WCAs until CSOP is approved and constructed. The schedule for that is likely to be congruent with the Tamiami schedule.
	15	NEPA in Section 3. Tamiami Trail modifications are not a Congressionally authorized project. The authorized project is Modified Water Deliveries. Thus, the *future without project condition* for the Modified Water Deliveries Project is NO MODIFIED WATER DELIVERIES PROJECT and not "the future of the study area as it would be expected to develop, if no improvements were made to Tamiami Trail." It violates NEPA to segment the MWD project. There is no Congressionally authorized "Tamiami Trail Project." If the Corps believes they have authorization to build the Tamiami Trail modifications under MWD, then it is a component of the MWD and the scoping should encompass the entire project area. The Corps' failure to do so merely supports the Tribe's position that the Corps has no authorization to construct a $159 two bridge Recommended Plan under MWD and will have to go back to Congress for funding an authorization. Indeed, the Corps' response to the Tribe's comments at Appendix L, Comment 21 proves the Tribe's point in that it states that MWD operations are not a Tamiami Trail feature. (Note: The Tribe will not		The 1989 Everglades National Park Protection and Expansion Act authorized the Secretary of the Army to improve water deliveries to the Park and restore natural hydrological conditions to the extent practicable. The Act did not prohibit the construction of bridges on Tamiami Trail as part of any recommended plan. The recommended plan is budgeted with authorized funding in the most recently submitted Department of Interior Capital Asset Plan.
	16	NEPA and its implementing regulations require that the cumulative impacts of past, present, and future actions be analyzed in the Final RGRR/SEIS. Section 7.18 of the Final RGRR/SEIS is woefully inadequate in that it only discusses the future impacts of CERP while it turns a blind eye to past and present actions...The Final RGRR/SEIS failed to analyze the cumulative impacts that at least five more years of IOP that will result from the Recommended Plan will have on the Everglades, endangered species, and Tribal lands.		JON
	17	The Final RGRR/SEIS fails to analyze the reasonable culvert alternative.		TRENT: The COE does not concur. The existing culvert structures were modeled as part of the alternative evaluation. The Manning's Coefficient that was used for the area immediately downstream of the culverts was the same as that used for the downstream marsh. It would be expected even with the removal of the exotic vegetation that the natural marsh species would re-establish and would influence the discharge of water from the culverts. This resistance would increase the stage in the L-29BC and have back water impacts into both WCA_3A and WCA-3B. See Figure 18, in Appendix D Annex A (Stage Differential between the L-29BC and Downstream Marsh), which shows the impacts that different openings have to the stage in the L-29BC including the existing conditions (culverts only).
	18	The Draft FWS CAR analysis of alternatives is Fundamentally flawed.		JDM: The CAR is a product of another agency (USFWS)and, as such, is not subject to comment and respose by the Corps.

	19	The Tribe suggested inclusion of the WRDA 2000 constraint language on the MWD Project in both the Draft and Final RGRR/SEIS. Even though the Corps included this language, it selected a Recommended Plan that ignores the Congressional directive in it. WRDA 2000 clearly prevents the two bridge Recommended Plan from being built as part of MWD. Moreover, there is no funding to build it. (See, Section 5.7.5 which says, "Construction of alternatives 10, 11, 12, or 14 would also be greater than the amount budgeted.") It is unfortunate that the Corps selected a		The 1989 Everglades National Park Protection and Expansion Act authorized the Secretary of the Army to improve water deliveries to the Park and restore natural hydrological conditions to the extent practicable. The Act did not prohibit the construction of bridges on Tamiami Trail as part of any recommended plan. The recommended plan is budgeted with authorized funding in the most recently submitted Department of Interior Capital Asset Plan.
	20	Performance Measures for alternatives failed to include the cost of delay. The cost of delay that will be caused to the Miccosukee Tribal lands and other parts of the Everglades should have been listed as a performance measure for analyzing the alternatives in the Final RGRR/SEIS.		BRAD: see response to earlier comment #
	21	The Draft RGRR/SEIS improperly excluded the Engineering Report on the design of the bridges and roadway reconstruction from Appendix D. This is contrary to NEPA, which requires that the public be given the opportunity to comment on these important engineering reports both in the draft and final report. The Tribe contends that it was imporper for the Corps to include the engineering report in the Final RGRR/SEIS for the first time.		An Engineering Appendix for the draft RGRR/SEIS was prepared and available upon request. Several stakeholders requested and received that appendix.
	22	The Corps failed to conduct an adequate analysis in the Final RGRR/SEIS on impacts of the Recommended Plan, and the high water that will be caused by the delay of constructing it, on archeological sites, including tree islands. Moreover, the Corps allowed the ad hoc advisory group to remove performance measures for reducing high water in WCA 3A that may have helped determined such impacts.		BARB The recommended plan will provide a conveyance of water southward across the trail, somewhat lessening the undesirable high stages in the Water Conservation Areas. We cannot evaluate the effects of delay in implementation of this recommended plan, as the intention is to achieve authorization and begin design immediately, followed by construction. However, reduction in overall stages and durations of high water in WCA 3-A will also require changes in the Water Control Plan of the south Dade Conveyance system and other parts of the C&SF project. These changes are now undergoing development as the Combined Structural and Operational Plan (CSOP). The Tribe is participating as part of an advisory committee (FACA authorized) in the collaborative development of the CSOP. This is not relevant to the Tamiami Trail report. The TT report recommends providing conveyance only. Operations are being handled under a separate process.
	23	There are numerous instances in App. L where the Coprs listed, but failed to respond to the Tribe's comments or responded with comments that contradicted the information provided in the Report. (See, for example, Comment 16, 20, 27, 31, 34, 51.) The Corps has a duty under NEPA to respond fully to all the Tribe's comments.		BARB We believe we responded to all referenced comments that contained questions we could answer. Comment 16 was a statement that we should not delay the project or compromise the health and safety of the public or tribe. We so noted. Comment 20 was an accusation that the document failed to comply with NEPA. USEPA rated the Draft RGRR/DSEIS "No Objections"; therefore it is in compliance with NEPA. Our response to comment 27 was inadvertently truncated in printing. However,in essence you commented that bridging the trail under MWD is illegal and a trick. We responded that we believed it was legal, but we cannot be expected to respond to accusations of trickery. We responded to comment 31. We responded to comment 34. (Any further questions must be referred to the Fish and Wildife Service, which determines the scope and subject matter of FW CARs and Section 7 Consultations). We also responded to Comment 51.
	24	The project area assessed under the Endangered Species Act in the Final RGRR/SEIS in Section 5.6.5.6 is woefully inadequate. The FWS Section 7 consultation looked at Tamiami Trail construction impacts only.		JDM: There are no operations associated with the Tamiami project that would require evaluation under the ESA. Operational aspects of MWD will be considered under CSOP.

		E. SPECIFIC COMMENTS ON THE FINAL RGRR/SEIS		
	25	**1. Project Partners, Section 1.2**: The Corps has responded to the Tribe's comment that the Project Partners described in this report, SFWMD, DOI, FWS, ENP, FWC, FDOT and DERM are not all project partners and has named some participating agencies. The fact is that these were really members of an ad hoc advisory team consisting of non-federal entities and consultants that to provided recommendations on Tamiami Trail to the Corps without complying with the Federal Advisory Committee Act (FACA).		The Corps complied with the Federal Advisory Committee Act.
	26	**3. Biological Opinion and Interim Flow Targets:** The Tribe disagrees with the discussion of the interim flow targets from the Biological Opinion contained in section 3.3. This section fails to state that the closing of the S-12 structures was the option selected and has been going on for over eight years and has, and continues to be, enormously environmentally destructive to Tribal lands in WCA-3A. The Corps should not base interim flow targets on a faulty Biological Opinion that has never been subject to NEPA review, nor an Amended Biological Opinion, which arbitrarily and capriciously removed the requirement that the MWD Project be completed by December 31, 2003.		TRENT: ISOP and IOP were developed for the protection of the CSSS. The plan to close the S-12s (i.e. S-12A, B and C) on specific dates was to achieve target water levels in NWSRS in order to improve the probability of a successful breeding season for the CSSS sub population A, which is listed as an endangered species under the ESA. Acknowledging that the S-12s discharges were seasonally restricted, Zone E1 was developed to compensate for the closure of the WCA-3A main regulatory outlets. Zone E1 created flexibility by allowing maximum practicable discharges to the east via S-333, which normally would not have been permitted under Zone E. Biological Opinions developed by the Fish and Wildlife Service under the U.S. Endangered Species Act are not subject to NEPA review.
	27	4. **Cultural Resources**: Section 5.6.5.6 of the Final SEIS mentions the historical importance of the Coopertown Airboat rides, but continues to fail to mention the historical importance of the authentic Miccosukee Indian Village along old Tamiami Trail, because it claims these areas are outside the project boundary. The Tribe contends the project area is that of the MWD Project. Thus, the Village, which is an historic family camp and the cultural resources that could be impacted by this project, include the cultural resources of the Miccosukee Tribe and peoples, including the tree islands in WCA-3A and other parts of the Everglades. The Tribe is pleased to read that it is the Corps' intent not to impede access to the Osceola and Tiger Tail Camps and will monitor the situation to see that this commitment is met.		JDM: Do not concur. The project area for the Tamiami feature of the MWD project is a sub-set of that for the overall project. There would be impacts to the referenced Tribal properties that would be needed to be addressed under the cultural resources evaluation.
	28	5. **Tribal Lands**: The Final RGRR/SEIS states at Section 7.14 and in their reply to the Tribe's comments that there will be no "direct" impacts on Tribal lands. Section 5.6.14 also claims that "no Tribal lands will be affected." The Tribe is concerned that the Corps can not definitively make this statements because it has not conducted the analysis necessary to find any harm and has improperly narrowed the scope of its analysis to only the Tiger Tail and Osceola Camps.		JDM: The referenced statements are correct and proper for the Tamiami project. No additional analysis is needed, as discussed above.
	29	**6. Hurricane Evacuation:** Section 5.3.2 discusses hurricane evacuation. The Tribe has continuously told the Corps that even though the Trail may not be a DOT hurricane evacuation route, it is the only route out for the Tribal members who live along the Trail in a hurricane. This reality should have been contained in the Final RGRR/SEIS. However, as the Miccosukee Tribal members and others in the Service Area use Tamiami Trail to travel across the Everglades, the Tribe is pleased to see that the Corps has committed to not impeding the traffic flow during hurricane season. Evacuation access is vital to protect the health and safety of both Tribal members and the public.		Need for use of the roadway during an emergency and evacuation is recognized in the proposed design.
	30	7. **Compatibility With CERP**: The Tribe supports the federal government's desire for compatibility with CERP in Section 5.7.8, but not in a manner that delays the implementation of the Pre-CERP MWD Project. The Tribe does not believe the Recommended Plan offers that compatibility in that it has a potential for political and bureaucratic mischief plus delay. The Corps		The 1989 Everglades National Park Protection and Expansion Act authorized the Secretary of the Army to improve water deliveries to the Park and restore natural hydrological conditions to the extent practicable. The Act did not prohibit the construction of bridges on Tamiami Trail as part of any recommended plan.

	31	In the last EIC, the Corps had developed a performance measure to assess the impacts to the camps, including access, privacy and encroachment, both during and after the construction phase. The Tribe is concerned that the secret advisory team discarded this PM and cautions the Corps to keep its word that the access to the camps not be impeded. non-negotiable. Finally, the Tribe notes that this section mentions for the first time in the Final RGRR/SEIS that a reduction in visitors to the Miccoskee Indian Village, Airboats, Restaurant, and Gas station located west of the project area could be experienced but does not assess the economic impact. Buffalo Tiger and other Tribal members also have airboat concessions along the Trail and the impacts to these concessions have also not been analyzed. Failure to analyze this economic impact to the Tribe in the Final Report violates NEPA. It also fails to mention, or analyze, a reduction in visitors that could occur to the Miccosukee Resort.		JDM: The previous EIS considered a wider range of alternatives
	32	**9. Hydraulics and Hydrology:** In Section 5.3.4 of the Final Report, the Corps has changed its requirement from Section 5 of the 2003 GRR/FEIS, that the final alternative selected need only pass the MWD design volume of 4,000 cfs in favor of an NSM model that passes 1372 acre feet of water which is even greater than the 921 acre feet of CERP D13R. This section now substitutes language concerning the L-29 canal only. The Final RGRR/SEIS fails to contain a hydrological analysis of NE Shark River Slough to show whether the Recommended Plan is even necessary using 4,000 cfs. This is improper under NEPA which requires a full disclosure document.		TRENT: This section describes the design limitations of the L-29BC. For reference to the NSM model see response to Comment 5.
	33	**10. Costs and Section 902:** The initial GRR on Tamiami Trail contained a $20.215 million dollar cost constraint on the Tamiami Trail component of the MWD project. Section 5.7.5 of the Final RGRR/SEIS contains no cost constraint but refers to the DOI Capital Assets Plan. Moreover, this section provides evidence that the $159 million dollars for the Recommended Plan exceeds the amount in the DOI Capital Assets Plan. The Final RGRR/SEIS is supposed to be a full disclosure document and should include only the funding currently in hand as a cost constraint. The blank		The recommended plan is budgeted with authorized funding in the most recently submitted Department of Interior Capital Asset Plan. The overall cost of the MWD project has not increased.
	34	WRDA Constraint Language: Although the Final RGRR/SEIS contains the WRDA 2000 constraint language, the Corps ignored the language in selecting its Recommended Plan. Section 601(b)(2) of WRDA 2000 prevents CERP components from being funded until the MWD Project is completed...Moreover, the Corps appears to incorrectly think that raising and bridging Tamiami Trail is not contrary to WRDA 2000, as long as the L-29 levee is not removed.		The 1989 Everglades National Park Protection and Expansion Act authorized the Secretary of the Army to improve water deliveries to the Park and restore natural hydrological conditions to the extent practicable. The Act did not prohibit the construction of bridges on Tamiami Trail as part of any recommended plan. The recommended plan is budgeted with authorized funding in the most recently submitted Department of Interior Capital Asset Plan.
	35	Betterments: The Final RGRR/SEIS finds that betterments to protect and enhace wildlife are not part of the project purpose. The Tribe urges the Corps to make certain that any DOI or SFWMD decision to incorporate them does not delay MWD.		NR

	36	Flood Damage to Road: Section 4.3 of the Final Report raises concerns about saturation and overtopping of the road, but fails to contain an analysis that uses the 4,000 cfs predicted maximum MWD flow to show whether this would happen...It should be noted that Section 3.4 states that water would begin overtopping the highway at an event frequency of between 200 and 500 years, which is well above the 100 year frequency that is usually the design basis. Through the use of NSM Version 4.6.2, and an excessive design grequency, the Corps has exceeded its authority, over-designed the Trail component and will cost taxpayers to waste $159 million dollars.		TRENT: THe MWD project is not authorized a specific flowrate but to the extent practicable to restore natural hydrologic conditions in ENP. Figure 6 of Appendix D Annex A shows a stage frequency analysis comparing computed stages from the 2x2 for several modeled alternatives from the CSOP study as wells as CERP and the NSM. Due to uncertainties of which alternative the CSOP study will select, it was decided that the Natural System Model (NSM Version 4.6.2) would be used for the roadway design high water for the FDOT roadway reconstruction. This model run was chosen because it represents our restoration stage and duration targets for the Greater Everglades System. For comparison of the conveyance capacity of the differenet bridge options where compared based on flows from Alternative 2 from the CSOP study.
	37	**14. No Schedule or Project Implementation Date:** The Final RGRR/SEIS contains no schedule for completion for Alternative 14. The 2003 Final RGRR/SEIS stated in Section 6.12 stated that the duration of the construction of the Plan would be 24 months. The 2005 Final RGRR/SEIS says the construction of the Recommended Plan will take approximately 36 months. The Tribe contends that the date the project could be completed should have been a factor in screening alternatives and must be included in the Final EIS. Failure to obtain Congressional authorization or funding for the Recommended Plan could delay MWD and CSOP beyond the new 2010 completion date.		From Section 6.10, "If the recommended plan is approved, design and construction would be completed approximately four years following the signing of the ROD [Record of Decision]. The duration of construction of the Recommended Plan is approximately 36 months."
	38	**15. Transportation**: Section 5 of the Final RGRR/SEIS states that Tamiami Trail will continue to be accessible during storms and hurricanes under the proposed Alternative 14. The Tribe reiterates that the Corps must take all precautions that both transportation and the safety of the Tribe and the public not be compromised during, or after, construction.		Need for use of the roadway during an emergency and evacuation is recognized in the proposed design.
	39	**16. Impact on Tribal Lands**: The statement in Sections 7.14 and 5.6.14 that no tribal lands would be affected and that there will be no direct impacts of any alternatives on Tribal lands is not supported by evidence in the record or the document itself. The Final RGRR/SEIS continues to fail		JON
	40	**17. Impact on Businesses**: The Final RGRR/SEIS fails to adequately assess the impact that would be caused to Tribal businesses by any alternative that delayed MWD or provided greater than CERP acre feet of water. While the Final RGRR/SEIS finally admits construction of the Recommended Plan could impact visitors to certain Tribal businesses, it fails to analyze the potential impacts, including economic, that it will have on the Miccosukee Resort and Gaming Facility, and the Tribe's Miccosukee Indian Village, Airboats, Restaurant, and Gas Station whose customers use Tamiami Trail.		JON
	41	**18. Osceola Camp**: The advisory team utilized by the Corps removed the analysis of impacts to the Osceola Camp as a Performance Measure. Without such a PM, the Tribe is concerned that the statement of no impact to the Osceola Camp may be inaccurate. The Final RGRR/SEIS does not analyze the impact that providing the greater than CERP acre feet of water will have on the Osceola Camp. While the Corps contends the large volume of water used to justify the bridge		TRENT: This performance measure was dropped because regardless of alternative selected the Osceola Camp would be adequately protected and all alternatives would have met this performance measure. Currently the Everglades National Park is in the process of designing a fix for the Osceola Camp. The design fix will utilize the same elevation constraints as that proposed for the Tamiami Trail (US41) Roadway and will meet all applicable design standards for the protection of the residents of the Osceola Camp
	42	**19. Tiger Tail Camp:** Ditto Osceola Camp.		TRENT: The Tigertail Camp was raised by the COE to elevation 14.5 feet in 1998 placing this area 4.4 feet above the NSM 100-year elevation.
	43	**20. Environmental Justice:** Ditto Osceola Camp...The Corps also failed to analyze the disparate impacts to Tribal Everglades and its culture and way of life due to the failure to implement the MWD Project in this section in the Final RGRR/SEIS.		BARB Osceola Camp will be raised, as was Tiger Tail Camp, above anticipated stages. No adverse impacts are anticipated.

	44	**21. Public Involvement:** Section 9.1 claims that the Corps complied with USACE and NEPA policies and sought public input. The Corps also claims in its response to the Tribe that it complied with FACA. (Appendix L at Comments 17 and 18.) In reality, the process conducted by the Corps was a secretive back door process which excluded the public. An ad hoc advisory group, which did not comply with FACA, met in private and invited the public in after the decisions were made to feign "public involvement." This is contrary to both FACA and NEPA. While the Corps contends the group did comply with FACA, this is incorrect. This group was never constituted under FACA, meetings were never published in the Federal Register, and other requirements of FACA were not met.		The Corps complied with the Federal Advisory Committee Act.
	45	**23. Water Quality:** The Final RGRR/SEIS fails to contain an analysis of the pollutants that will have to be cleaned up from these S-9 discharges before the project is implemented. The Corps contends that this will be done under CSOP.		JIM
	46	**25. Tamiami Trail List of Preparers**: NEPA requires an EIS to be a full disclosure document. The Tribe disputes that the list of preparers at page 145 is the full list of people who contributed to this document. NEPA requires this document to include the name of the advisory team and anybody else who worked on the RGRR/SEIS process.		BRAD
	47	The RGRR/SEIS process was not consistent with the Corps' Trust Responsibility to the Tribe. The Tribe was asked to attend "interagency meetings" in the prior Tamiami Trail EIS process, which it insisted be public meetings. This time, despite the fact that the Tribe directly asked the Corps to be included in the process, it was excluded from the meetings which were secretly held without both the Tribe and the public. The Tribe only found out about these secret meetings, which discussed matters that had a direct impact on the Tribe, when documents were leaked. Tribe. The Corps has a duty to conduct meaningful pre-decisional consultation. The Corps' response to the Tribe's comments that it was invited to attend all public meetings is insulting and does not meet this requirement. Appendix L at Page 58, Comment 62. The Corps has a solemn trust responsibility to choose a plan that will protect Tribal natural resources and Trust resources and should have rejected the Recommended Plan because it will cause further destruction of Tribal lands. The Corps' selection of Alternative 14 as the Recommended Plan in the Final RGRR/SEIS		BARB. The technical design meetings in which the alternatives were evaluated, ranked and scored, and the preferred alternative identified, were not public meetings. It is not customary for the technical plan formulation and evaluation meetings to be pub
Everglades Foundation - Betty J. Grizzle, D.Env. Wetland Scientist	1	It is disappointing to find that this EIS process has not resulted in the selection of an alternative that would not only best meet the stated project's objective, but also one that is cost effective. As noted by various resource agencies and voiced by the numerous public comment letters, Alt 17, the 10.7 mile bridge, represents the "environmentally preferred plan" that best meets the four objectives of restoring the wetland functions of Northeast Shark River Slough. The Everglades National Park Protection and Expansion Act of 1989 (PL 101-229), states: Construction of project modifications authorized in this subsection...are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the park in particular and shall not require further economic justification. (Section 104(a)(3)). ...		NR
	1 cont ...	... The environmental benefits for Alt 17 are described in supporting documents from the U.S. FWS and Everglades National Park (App F) and the EIS document itself also stated that this alternative provides the "greatest potential" for restoration of ridge and slough habitat within Everglades National Park. However, the EIS concludes that the longer bridge alternative could not be recommended because its costs would greatly exceed the project budget, even though this alternative was demonstrated to be cost effective relative to habitat units provided (Table 25).		
	2	Given that the recommended plan selected presents an alternative that consists of two bridges as well as raising the crown elevation of the road from an average elevation of 11 feet to 12.3 feet, there is a concern that this alternative will create additional problems that were not addressed in the EIS. First, as noted by comments submitted to the draft document by the National Parks Conservation Association (letter dated October 11, 2005), the construction of these structures may preclude future modifications that may be proposed for the CERP Decompartmentalization Project. It will be more difficult and more expensive in the long run to construct a single bridge once the two separate bridges are in place should funds be available for this modification under additional funding authorizations.		Although the Recommended Plan for the Tamiami Trail Modifications Project certainly affects the future-without-project condition, it does not limit the alternative options for Decomp or any other CERP project.

	3	Additionally, the raising of the road is likely to result in an increase in road mortality not documented in the EIS. The Tamiami Trail has been described as an "avenue(s) of destruction for snakes" and represents a significant barrier to mass reptile and amphibian migration (as described by Tennant in *A Field Guide to Snakes of Florida*, 1997). By increasing the road elevation, wildlife will require longer crossing time thereby increasing the exposure time to road traffic and subsequent injury or mortality. This environmental impact has not been evaluated in the current EIS.		JON
	4	Recommendation: The Corps, *at minimum*, should consider an alternative that incorporates a single 4-mile bridge, as described within the *Draft Tamiami Trail Alternative Optimization Report*, prepared by Everglades National Park (Appendix F). This alternative appears to result in restoring similar historic flow volumes to Northeast Shark River Slough as the 10.7 mile bridge alternative. However, a four mile bridge will only provide 37% of the potential connectivity between Water Conservation Area 3B and Northeast Shark River Slough (ENP Report, p. vii). Therefore, the Corps and DOI should work as expeditiously as possible to secure funds that will allow the construction of an elevated roadway across the entire 10.7 mile portion of the Tamiami Trail between S-334 and S-333.		NR
National Parks Conservation Association - John Adornato, III Everglades Restoration Program Manager Sun Coast Regional Office	1	On behalf of National Parks Conservation Association (NPCA), I again urge the US Army Corps of Engineers (Corps) to select Alternative 17, the 10.7-mile, elevated "Skyway," as the best and viable alternative to restore water flow and ecological connection through America's Everglades into Everglades National Park and Florida Bay. NPCA is disappointed that the Corps's Final Revised General Reevaluation Report/Second Supplemental Environmental Impact Statement (RGRR/SEIS) for the Tamiami Trail Modification of MWD continues to recommend an alternative that does not deliver significant environmental benefits for Everglades National Park, and could preclude the construction of the Skyway in the future with other authorizations or appropriations.		NR
	2	We appreciate the Corps's attempts to address a number of issues NPCA raised in our previous comments, dated October 11, 2005. We understand the fiscal constraints presented by the Corps and the Department of Interior, however, we remain unconvinced of the benefits that the Corps's preferred plan provide for Everglades National Park and the greater Everglades ecosystem. Other alternatives are less costly and build a single span bridge, which would be more compatible with a possible future Skyway.		NR
	3	Without completely unimpeded flow, life-giving water will continue to flood the conservation areas and not travel naturally through Everglades National Park out to Florida Bay. Only a Skyway will truly reestablish unrestricted, free flowing water to the park, a critical component to a fully restored Everglades, on which South Florida's wildlife and its six million residents rely for drinking water, recreation, and other uses.		NR
DEP	1	In Reference to COE Comment 4 -Concur that changes to the document were made, however these changes were in Section 7.4, not Section 5.8.		JIM
	2	In Reference to COE Comment 8 -Concur that changes to the document were made, however these changes were in Section 7.65, not Section 7.20.		JIM
	3	In Reference to COE Comment 16 -Response to comment indicates that text will be revised; however no changes to this section were noted.		JIM
	4	In Reference to COE Comment 23 -Response to comment indicates that Appendix G has been revised; however no changes to this section were noted.		JIM
Sierra Club	1	The Sierra Club is disappointed that the report recommends Alt 14, a plan that often provides less than half of the environmental benefits and objectives of Alt 17 (10.7 mile bridge) and that cost was a major factor.		NR
	2	The Sierra Club is concern that Alt 14 will be inadequate to meet future restoration goals criteria.		NR

	3	The Sierra Club is concerned that, and assumes that there will be retro fitting of TT to accommodate DECOMP.		Although compatibility with the Comprehensive Everglades Restoration Plan (CERP) was certainly a consideration, the Tamiami Trail Modifications Recommended Plan is based primarily on the benefits and costs associated with the objectives of the overall Modified Water Deliveries Project. It was not appropriate or even possible to fully consider the potential alternative plans and the costs for future CERP projects.
	4	The Sierra Club states that the discussion of the 10.7 mile bridge alternative is inadequate given the level of interest from individuals, agencies, and environmental advocacy organizations.		JON
	5	The Sierra Club is not satisfied with the discussion of cumulative impacts.		BRAD
US Department of Interior - Terrence C. Salt	1	The Department supports the Recommended Plan, Alterantive 14, described in the report. The plan achieves in a cost effective manner the goal of restoring more natural flows of water to Everglades National Park ... as set forth in the lesgislation authorizing the Modified Water Deliveries to Everglades national Park Project.		NR
	2	We look forward to working with the Corps twoard the expeditious completion of the Modified Water Deliveries to Everglades National Park Project and the achievement of vital benefits for Everglades National Park and the region.		NR

List #1 Commenters (FAX)

1 Anne Barker
2 Adam Ackerman
3 Diane Tabbott
4 Janice Gibson
5 Bert Taylor
6 Julie Bond
7 Kathy Sherrard
8 Diane Albert
9 Jacob Pounds
10 Roberta Richardson
11 Crystal Durham
12 Aleksandra Rebic
13 Kya Eckstrand
14 Nichole Long
15 Sharon Mullane
16 Azel Beckner
17 David Dunkleberger
18 Bryan Dolney
19 Erlene Jackson
20 Robin Rae Swanson
21 Marisa Rose Faraldo
22 Paul Rosenberger
23 Jelene Turk
24 Steven Aderhold
25 Catha Loomis
26 Matthew Davidson
27 Karen Photopulos
28 Kimberly Peterson
29 Carol Wagner
30 Abby Hunt
31 Wendy Walters
32 John Brinkman
33 Tim Duda
34 Richard W. Woerpel, DVM
35 Mark Mueller
36 Harriette Frank
37 Anne Ritchings
38 Darcy Struckman
39 David Randall
40 David Cayford
41 D Vasquez
42 Eileen Appolone
43 Appia
44 Roberth Wagner
45 Gavin Kramer
46 Deb Klein
47 Rema Comras
48 Nathanael Mooberry
49 Linda Cody

50 Dennis German
51 Vince Mendieta
52 Roz Eiler

List #2 Commenters (E-mail)

1	Anne Barker	201	401
2	Adam Ackerman	202	402
3	Diane Tabbott	203	403
4	Janice Gibson	204	404
5	Bert Taylor	205	405
6	Julie Bond	206	406
7	Kathy Sherrard	207	407
8	Diane Albert	208	408
9	Jacob Pounds	209	409
10	Roberta Richardson	210	410
11	Crystal Durham	211	411
12	Aleksandra Rebic	212	412
13	Kya Eckstrand	213	413
14	Nichole Long	214	414
15	Sharon Mullane	215	415
16	Azel Beckner	216	416
17	David Dunkleberger	217	417
18	Bryan Dolney	218	418
19	Erlene Jackson	219	419
20	Robin Rae Swanson	220	420
21	Marisa Rose Faraldo	221	421
22	Paul Rosenberger	222	422
23	Jelene Turk	223	423
24	Steven Aderhold	224	424
25	Catha Loomis	225	425
26	Matthew Davidson	226	426
27	Karen Photopulos	227	427
28	Kimberly Peterson	228	428
29	Carol Wagner	229	429
30	Abby Hunt	230	430
31	Wendy Walters	231	431
32	John Brinkman	232	432
33	Tim Duda	233	433
34	Richard W. Woerpel, DVM	234	434
35	Mark Mueller	235	435
36	Harriette Frank	236	436
37	Anne Ritchings	237	437
38	Darcy Struckman	238	438
39	David Randall	239	439
40	David Cayford	240	440
41	D Vasquez	241	441
42	Eileen Appolone	242	442
43	Appia	243	443
44	Roberth Wagner	244	444
45	Gavin Kramer	245	445
46	Deb Klein	246	446
47	Rema Comras	247	447
48	Nathanael Mooberry	248	448
49	Linda Cody	249	449

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RECORD OF DECISION
CENTRAL AND SOUTH FLORIDA PROJECT
MODIFIED WATER DELIVERIES TO
EVERGLADES NATIONAL PARK
TAMIAMI TRAIL MODIFICATIONS

DECISION

The Final Revised General Reevaluation Report and 2nd Supplemental Environmental Impact Statement (RGRR/SEIS) for the Central and Southern Florida Project, Modified Water Deliveries to Everglades National Park, Tamiami Trail Modifications, in Dade County, Florida address the additional water conveyance needs across the Tamiami Trail. Based upon the RGRR/SEIS, views of other Federal, State, and local agencies, Native American Tribes, non-governmental organizations, the general public, and the review by my staff, I find the plan recommended by the District Engineer, Jacksonville District, U.S. Army Corps of Engineers to be technically feasible, environmental justified, cost effective, in accordance with environmental statutes, and in the public interest. The recommendation is to implement the plan identified in the RGRR/SEIS as Alternative 14. This alternative includes the construction of a bridge up to 2-miles long at the western end of the 10.7-mile project corridor, a bridge up to one-mile long at the eastern end, and raising the profile of the unbridged portions of Tamiami Trail.

ALTERNATIVES AND CONSIDERATIONS BALANCED IN MAKING THE DECISION

The project would provide necessary capacity through Tamiami Trail (U.S. Highway 41) for the modified water flows to the Everglades National Park (ENP) while avoiding unacceptable structural impacts on Tamiami Trail due to modified flow regime.

In addition to the no-action alternative, nine other alternatives with removal of portions of the road replaced by one or more bridges of various lengths were carried through the final alternative evaluation and selection process. These included the three different bridge lengths evaluated in the 2003 GRR/SEIS that were withdrawn pending additional analyses. The present document incorporates by reference all the alternatives that were analyzed in the late 1990's and in the 2003 GRR/SEIS, but have subsequently been eliminated from further consideration. The No-Action Alternative would involve making no improvements to the Tamiami Trail to increase the capacity to convey water flows from the north without damaging the Tamiami Trail roadbed. All action alternatives included elevating the unbridged portion of the highway to prevent roadbed deterioration from elevated water levels during high water flows expected after implementation of potential future water management plans, and providing vehicle access, as needed, for the private properties along the south side of the highway. The action alternatives differed in the length of road removal/bridge spans and location. Alternative 9 consisted of a 3000-foot bridge span located at the western portion of the project corridor. Alternative 10 consisted of a centrally located four-mile bridge.

Alternative 11 consisted of an easterly located four-mile bridge. Alternative 12 consisted of a westerly located three-mile bridge. Alternative 13 consisted of a westerly located two-mile bridge. Alternative 14 is described above as the Recommended Plan. Alternative 15 consists of a two bridges with lengths of 1.3 miles and 0.7 miles located to the west and east, respectively. Alternative 16 consists of three 3000-foot bridges located in the western, central, and easterly portions of the project corridor. Alternative 17 consists of a 10.7-mile bridge spanning the entire corridor.

The alternative plans were evaluated based on their potential performance in restoring the historic hydropatterns and functions of the downstream wetland ecosystem in the Northeast Shark River Slough portion of Everglades National Park. Specific efforts were made to avoid or minimize any adverse effects on historical and cultural resources, local businesses, and Native American facilities along Tamiami Trail. Overlaid on this was a fiscal consideration in the allowable cost of construction based on the project budget limit of the Department of Interior (USDOI). Based on the analysis prepared for the RGRR/SEIS, input from other agencies, and public input, the environmentally preferable alternative is the 10.7-mile bridge designated as Alternative 17. Alternative 17 was not recommended because of its extremely high cost and significant adverse cultural and socio-economic impacts. Cognizant of the USDOI budget considerations, the Recommended Plan (Alternative 14) would best meet the ecosystem restoration objectives of the project, while minimizing cultural and socio-economic impacts and adverse effects to the private properties along the highway.

MEANS TO AVOID OR MINIMIZE ADVERSE EFFECTS

All practicable means to avoid or minimize adverse effects have been incorporated into the Recommended Plan. The road removal/bridges have been sited where they will allow significant restoration of the downstream wetlands and minimize, as much as possible, impacts to private development and to two wading bird nesting colonies along the highway. Vehicle access will be provided to all businesses during and after construction. Impacts to traffic flow will be minimized by designing the highway construction corridor to allow two-way traffic during non-construction hours in accordance with Florida Department of Transportation (FDOT) standards. The design of the bridges and remaining highway fully meets all FDOT standards for public safety and durability.

Conditions to stringently control turbidity and erosion during construction will be placed into the construction specifications to minimize any impacts to downstream resources. A storm water collection system will be designed into each bridge to treat runoff in order to meet State water quality requirements.

Consultation with the U.S. Fish and Wildlife Service (USFWS) under provisions of the Endangered Species Act on listed species under their jurisdiction has been completed. Formal consultation on the Florida panther resulted in a USFWS Biological Opinion concluding that implementation of the Recommended Plan is not likely to jeopardize the continued existence of the Florida panther. For all other listed species in

the project area, the USFWS agreed with the Corps' determination that the Recommended Plan may affect, but would not be likely to adversely affect, the indigo snake, West Indian manatee, Cape Sable seaside sparrow, and Everglade snail kite.

A cultural resources survey has been conducted and concluded that two properties and the Tamiami Trail and Canal are eligible for listing on the National Register of Historic Places for their historical significance. The State Historic Preservation Officer has concurred with these determinations and will participate in an MOA on appropriate mitigation for impacts to these features.

Government to Government consultation with the Micosukee Tribe of Indians of Florida will continue throughout the project implementation process in fulfillment of the Army's trust responsibilities to the Tribe.

PUBLIC /AGENCY COMMENTS IN THE FINAL EIS

All public comments received on the Final EIS have been addressed and incorporated into the recommended plan, as appropriate. The Miccosukee Tribe of Indians continues to oppose any bridge, preferring that the existing culverts be cleared out and augmented as needed to pass the maximum practicable flows. Non-governmental environmental organizations and their members continue to express a preference for bridging the full 10.7 mile length of the project corridor. The Florida State Clearinghouse determined that the Recommended Plan was consistent with the Florida Coastal Zone Management Program at this stage. The FDOT and the Florida Department of Environmental Protection provided documents supporting the project. No other State agencies had any further comments. The USDOI provided a letter of support for the Recommended Plan. The U.S. Environmental Protection Agency rated the Plan as LO, Lack of Objection.

COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

The Recommended Plan is in compliance with all applicable environmental laws and requirements including but not limited to the National Environmental Policy Act, Endangered Species Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, Coastal Zone Management Act, and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations." Recommendations from the USFWS under the Fish and Wildlife Coordination Act have been incorporated into the recommended plan. The Draft and Final EISs were distributed for public comment, and all comments were incorporated and considered. The U. S. Fish and Wildlife Service transmitted the final Biological Opinion to the Jacksonville District on January 12, 2006. The Biological Opinion completes compliance with Section 7 of the Endangered Species Act for this phase of the project. As between the Federal Government and the Non-Federal Sponsor, complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction,

operation, maintenance, repair or replacement of the project for lands for which the Non-Federal Sponsor has received a land compensation payment. In no event will the Federal Government assume any financial responsibility for cleanup and response costs of any CERCLA regulated materials for any lands associated with the project.

SUMMARY

Technical, environmental and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's *Principles and Guideline*. All applicable laws, executive orders, regulations, and local plans were considered in evaluating the alternatives. The recommend plan is not the environmentally preferable plan, but is the one that delivers substantial benefits in a cost effective manner while meeting the overall Federal and State objectives and incorporates features to avoid, minimize, or mitigate adverse environmental and social effects. Based on review of these evaluations, I find that the benefits gained by implementation of the recommended plan far outweigh any adverse impacts and the overall public interest will best be served. This Record of Decision completes the National Environmental Policy Act process.

John Paul Woodley, Jr.

John Paul Woodley, Jr.
Assistant Secretary of the Army
(Civil Works)

Date: January 25, 2006

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Date: January 25, 2006